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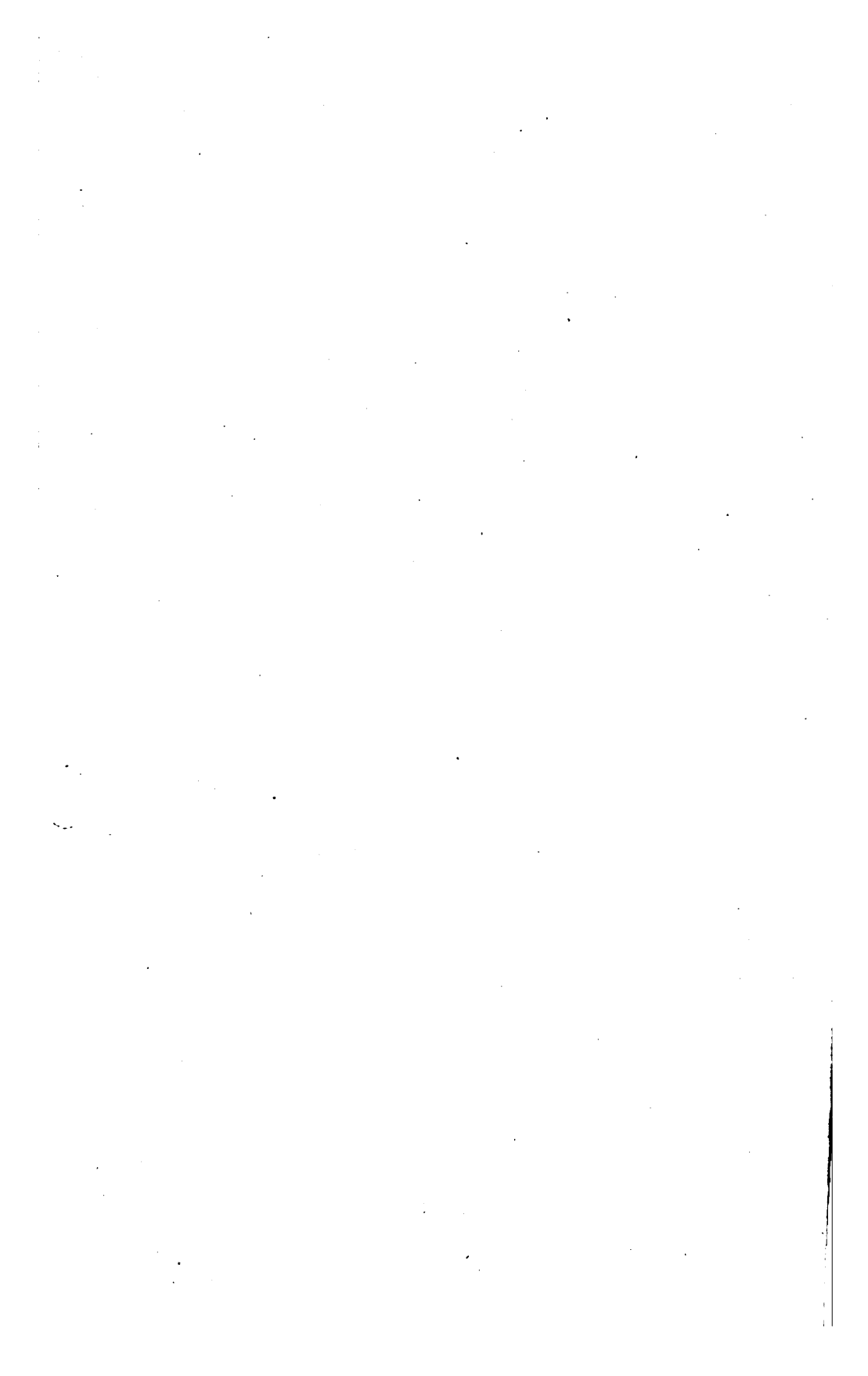
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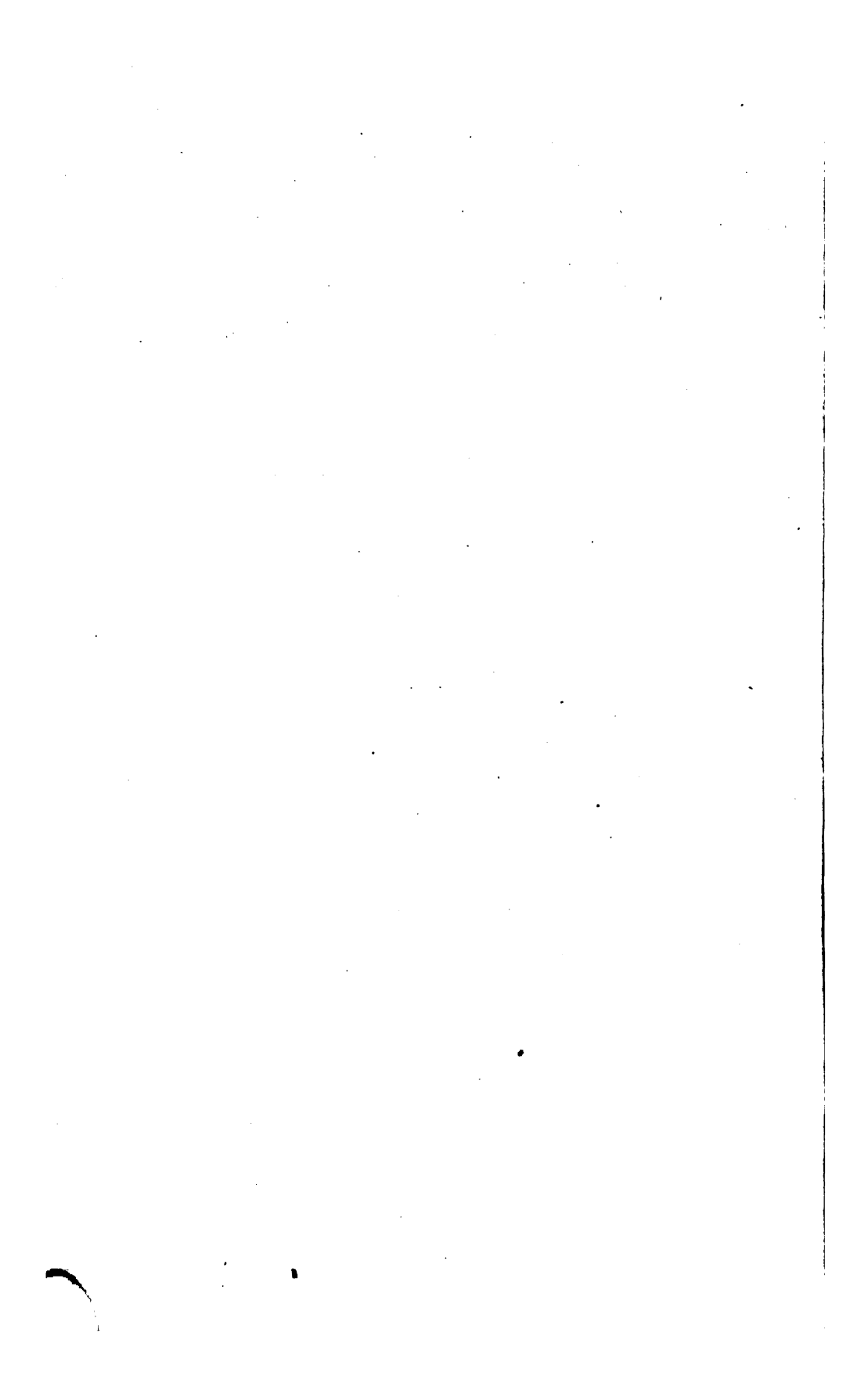
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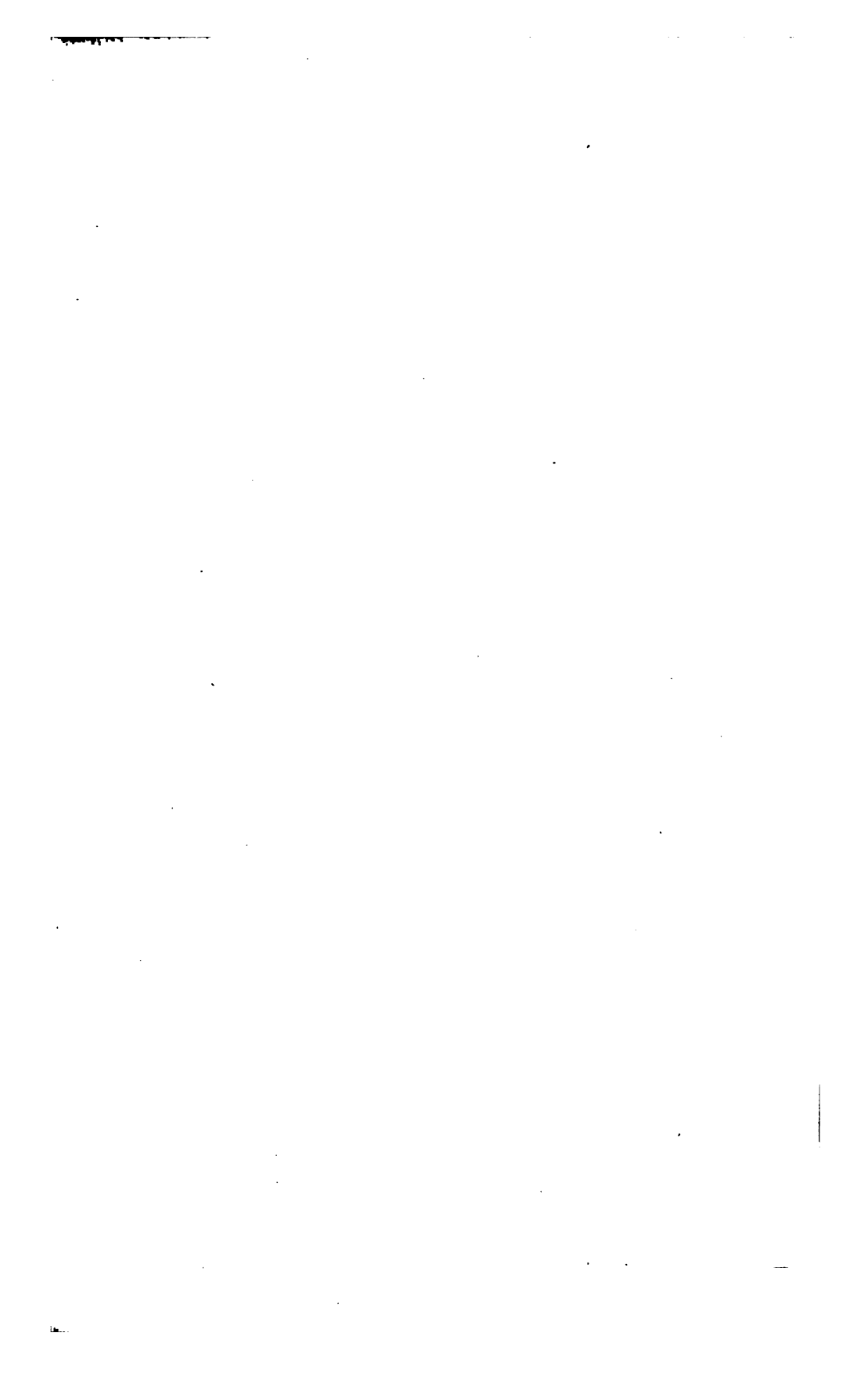
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REPORT 42006

OF THE

DIRECTORS

OF THE

Boston & Providence Railroad.

Presented at the Annual Meeting of the Stockholders.

JUNE 6, 1849.

TOGETHER WITH A REPORT OF THE EXAMINING
COMMITTEE OF THE STOCKHOLDERS.

BOSTON:
1849.
EASTBURN'S PRESS.

E.H.

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MAR 7, 1901

DIRECTORS' REPORT.

Since the last Annual Report, the Capital Stock of the Corporation has been increased from \$2,580,000, to \$3,137,400, and contracts have been made for farther sales, which will mature on the 26th inst., and which will make the Capital Stock on that day, \$3,160,000,—the limit which is prescribed by the several acts of the Legislature in relation to this subject.

As the very heavy operations which have been undertaken by the Corporation during the last three years, are now very nearly completed, the Directors think this a proper occasion to invite the Stockholders to a retrospect of these operations and to a consideration of the manner in which the increased capital has been expended, and the reasons which led to these expenditures.

No increase of the capital has been made without a full statement to the Stockholders of the objects for which it was asked, and, in every instance, the proceedings of the Directors have met with their unanimous approbation. But it is unfortunately true that meetings of Stockholders are usually but thinly

attended, and the Directors now desire to present in one view the general history of their proceedings during the period mentioned above, although the doing so will involve a repetition of what has been heretofore stated in the annual Reports, and at special meetings of the Stockholders.

The Capital Stock on 1st April, 1846, was \$2,057,500, and now, as before stated, stands at \$3,137,400, showing an increase of about 50 per cent.

The principal item in the expenditure of this increased capital, is the cost of construction of the Pawtucket Branch, — the continuation of the Road from Pawtucket to Providence, and of the improvements at Providence, made in conjunction with the Providence and Worcester Railroad Company.

In 1845, the last named Company were building their Road from Providence to Worcester, the line of which passes through Pawtucket, at a point between four and five miles from our Road at Dodgeville. A branch Road from Pawtucket to Dodgeville, would, of course, complete a communication between Boston and the centre of Providence, which necessarily would take the whole business between these two points. A preliminary survey of that route, was made by citizens of Pawtucket, a petition for an act of incorporation with power to construct that Branch was prepared, and about to be presented to the Legislature of 1846, and we were thus threatened with a loss of the business upon seven or eight miles of our Road,—the distance from Dodgeville to India Point,—and in doing that brought to us by means of the Providence and Worcester Road, and the Branch from Pawtucket, we should be subject to all the disadvantages which necessarily result from transacting business in connection with Branch roads.

The Directors regarded it as of *vital* importance to the interests of this Corporation, to take measures which should avert consequences so disastrous.

And, independently of these considerations, it was seen that great advantages would result to this Corporation from the opening of a new communication with the City of Providence. The views of the Directors upon this subject, were exhibited in their Report to the Stockholders in 1846, from which an extract is now given.

“The Corporation at the late session of the Legislature, asked for and obtained leave to construct a Branch Road, leading from a point in our Road near Dodgeville, to the line of the State of Rhode Island, in the town of Pawtucket. The object in obtaining this grant, was to open a new route to the City of Providence. This object will be attained by the construction of this Branch Road, a continuation of it for a very short distance in Rhode Island, until it strikes the proposed line of the Providence and Worcester Railroad, and by a union with the Providence and Worcester Railroad Corporation in carrying the Road from this point of junction into Providence.

“The Stonington Road is to be brought to the same point in that city.

“The advantages of this operation to the Corporation have been apparent to the Directors. When the several Roads shall be completed, the line between Boston and New York will be shortened by about three-fourths of an hour. The detention caused by the ferry at Providence on every trip, is found to be 26 minutes, exclusive of delays occasioned by fogs, groundings and other accidents incident to that mode of transportation. Travellers

will be relieved from the inconveniences to which a ferry, however well regulated and managed, must always subject them. A direct communication by Railroad will, by means of this Branch, be opened between the property of the Corporation at India Point, and the valley of the Blackstone, and great facilities afforded for the transportation of heavy freight to the towns upon and in the vicinity of the line of the Providence and Worcester Road. The distance from Boston to the centre of business in Providence, will be shortened by about one-fourth of a mile, and as the Road is to terminate at that centre, large expenses for carriage hire and for the transportation of freight in Providence, will be saved to those travelling, or doing business on the Road."

For these reasons, the force of which our subsequent experience has not, in the opinion of the Directors, at all weakened, the Board, with the sanction of the Stockholders, commenced and have finished the work, the cost of which has been \$577,926 31.

Within the last few years several applications for charters have been made to the Legislature, the granting of which would have materially affected the interests of this Corporation. One of these was for a Road from the South Cove in Boston, to the Blackstone river, running through Dedham (known as the "Perkins' Route.") The construction of such a Road would not only have taken the travel between the Blackstone valley and Boston from our Road, but would have established a formidable competing line between Boston and Dedham. At the session of 1848, the citizens of West Roxbury petitioned for a Road from that village to Brookline, there to connect with the Worcester Road. That Road if built,

would have been continued to Dedham, (2 1-2 miles,) at very little expense, and thus a serious inroad would have been made in that branch of our business. At the same session, several influential and energetic citizens of Dedham, asked for authority to build a Road to run from Dedham, through West Roxbury to a point on our Road, but four miles from Boston. This application was grounded upon the fact, that such a Road would shorten the distance between Boston and Dedham between one and a half and two miles, and the petitioners claimed, with some show of reason, at least, that the growing business and rapidly increasing population of Dedham, as well as a due regard to the interests of West Roxbury, entitled them to the charter for which they petitioned. In addition to these facts, the Directors found that the rail on the present Dedham Branch, was too light for the transaction of the business to be done upon it, which had grown up beyond the most sanguine expectations of those who constructed the Branch running at a right angle with our main Road. They also found that if the Norfolk County Road should be brought across the Fowl Meadow, to strike our Road at a point about eleven and a half miles from Boston, it would be necessary for us to lay a second track from the Low Plain to that point of junction, about three miles. It was also apparent that our running in connection with the Norfolk County Road must be wholly independent of our Dedham trains, if the junction was to be made at the Fowl Meadow, the disadvantages of which arrangement were sufficiently obvious.

The Directors believed that if we did not, to some extent, shorten the distance between Boston and Dedham, the Legislature would look upon the com-

plaints so constantly made, and so vigorously pressed, as having a reasonable foundation. But it was found that this could not be done to the extent of even half a mile, without very great expense.

The Board thus finding that the business which this Corporation had built up between Boston and Dedham was seriously endangered, and that it was their duty to take some measures to counteract the several projects, the execution of which would produce that result, caused surveys to be made of the route from the Toll Gate Station through West Roxbury to Dedham. The several petitioners for competing lines, agreed to withdraw their petitions, if this Corporation would construct that Road. The Norfolk County Railroad Company, agreed that they would abandon the Fowl Meadow route and strike our Road at Dedham, if, as we could do by the new route, we would make the distance between Boston and Blackstone as short by the way of Dedham, as by the way of Fowl Meadow; and the Directors, after very mature deliberation, were of opinion, that the true interests of the Corporation, required that they should build this new Road, and thus not only preserve our present business, but, by thus establishing the shortest practicable route between Boston and Dedham, secure themselves against all future competition in that direction. They accordingly obtained the necessary authority from the Legislature, and then at a special meeting of the Stockholders called for that purpose, submitted to them their views upon the subject and asked for their action upon it. The meeting unanimously accepted the act, and authorized the Directors to proceed in the construction of the Road.

This operation was expected, and has proved, to

be a very expensive one, and the Directors have again gone into the details of the reasons which operated upon their minds, and upon the minds of the Stockholders in undertaking it, because they have reason to believe that some misapprehension has existed as to the facts, and some doubts as to the expediency of the course taken, growing out of such misapprehension.

In regard to both the expenditures, the object of which has thus been stated, the Directors are now unanimously of opinion that they were wisely made, and however unfortunate the necessity of making them, and however depressing for the time to the market value of the stock, that the permanent interests of the Corporation rendered them indispensable.

The amount already expended upon this Branch, is \$184,078 12, and it is intended to present a liberal estimate, when it is stated that the cost of its completion will be \$100,000, in addition.

In 1840, a double track was laid from Foxborough to Sharon Hill, (about three miles,) at an expense of \$25,853 71. This had become absolutely necessary to the safe and advantageous working of the road. Within the three years, also, \$79,076 53 have been expended in the erection of the passenger and freight houses at the Boston Station. The necessity of that expenditure, it is believed, cannot be doubted. We have now, buildings of a permanent character, large enough to answer our purposes for many years to come, and which the business of the Corporation absolutely required.

We have also purchased, at the same station, about 40,000 feet of land, at a cost of \$58,571 00. A part of this was required for the buildings, and

the remainder is used as a yard, and lies north of the passenger house. It had become apparent that we required more space for the transaction of our business, and that within a very short time, we should be obliged to purchase more land in some direction, at any cost. The City of Boston claimed the right to shut us out from all access to the northerly side of our premises, and a long litigation was had between them and the Corporation, in which that claim did not appear to be wholly groundless. It was at length adjusted, and a satisfactory title given to the land, which has secured to the Corporation an easy and remarkably convenient access to their property—and given to them all the land which will probably ever be needed for the transaction of their business. If more has been purchased than may hereafter be thought necessary for that purpose, it is satisfactory to know, that any portion of the property can be sold at a largely advanced price.

Since April 1, 1846, the sum of \$95,091 23, has been charged to account of "construction" for additions to the equipment of the road, the cost of new station and engine houses, and the cost of land other than that before mentioned.

In 1844 and 1845, there was charged to income account \$76,084 84, for "depreciation" in the value of cars and engines. No allowance of this kind was made in 1846, because two new engines, put upon the road in that year were charged to the current expenses of the year. It is believed that the balance now standing to the credit of income account, after charging to that account the loss upon the sales of stock below par, is abundantly sufficient to cover the depreciation since that time. If the income account be now balanced in that manner, there will have been

an allowance of about \$130,000 made for depreciation within the last five years.

About \$110,000 00 for sales of stock, upon contracts not yet matured, will fall due before the first of September, next.

The net earnings of the road for the year ending, July 1, 1849, (estimating the receipts and expenses of May and June to be the same as in the year 1848) will be \$183,139 18. The January dividend amounted to \$86,799 00: leaving \$96,340 18, applicable to a dividend from the business of the current half year.

The gross receipts for the first four months of the present year exceed those of the corresponding period of 1848, by the sum of \$13,165 58, (or 13 per cent.) without any increase of expenses. It is gratifying to find, that this increase is divided among all the different sources of business on the road.

Thus, the Providence travel has increased 7 per cent.; the way travel 45 per cent.; the New York travel 29 per cent.; the New York freight 10 per cent., and the local freight 20 per cent. The charge for transportation of New York freight was, by the unwise action of a competing line, reduced during the whole of the past winter, 40 per cent. below the usual winter rates. There is reason to believe, that such a state of things is not likely to occur again—and that the managers of all the lines will hereafter recognize the propriety of so far acting in harmony as to secure a fair remuneration for the business done on them.

The state of the affairs of the Corporation on the 1st of July, 1849, will probably be as follows:—

Dr.

Notes payable,-	-	-	-	\$125,708 99
Estimate for the entire completion of West Roxbury Branch,	-	-		100,000 00
Estimated, for cost of land and build- ings at Dedham, and of about nine- ty thousand feet of flats in Boston, for the purchase of which the di- rectors are now negotiating,	-			60,000 00
				\$285,708 99

Cr.

Notes receivable, -	-	-	-	94,220 71
Unpaid stock, -	-	-	-	20,227 00
Cash, -	-	-	-	45,533 95
Estimated net receipts in June,	-			\$16,000 00
				\$175,971 66

The stock of engines and cars belonging to the Corporation is as follows :—

1	Locomotive,	20	tons,
11	"	18	"
2	"	12	"
3	"	10	"
1	"	8	"
22	Passenger Cars, 1st Class,		
6	"	"	2d "
10	Baggage Cars,		
82	Freight.	"	

All the larger engines are in superior order, with the exception of two, which require slight repairs. Of the passenger cars, twelve of the first class are in superior condition, and the remainder, as well as the

second class and baggage cars, are in good serviceable order.

A new locomotive, weighing eighteen tons, will be put upon the track in July, making the eleventh first class engine which has been constructed in the repair shop of the Corporation within the last five years.

It is believed, that the present stock of locomotives is fully equal to the efficient and economical working of the road, and that no addition to that part of the equipment will be required for at least five years to come.

It is also believed, that the supply of passenger and baggage cars, will be sufficient, without any addition, for, at least, the next two years.

It appears, that during the last three years, \$18,026 78, have been expended in the renewal of bridges. These may be considered as extraordinary expenses for those years. It is estimated that about \$7,000 00 will be expended for similar purposes during the current year, and that then all the bridges on the road will be in a safe and substantial condition for the next twelve or fifteen years, excepting, perhaps, the bridge at India Point.

The road and the station, and engine houses throughout the line, are in far better condition than they have been at any time since the construction of the road.

The Corporation own a very large and valuable property at India Point, which, since the transfer of the principal business to the new station in Providence, has become comparatively unimportant for railroad purposes. Whether it can be entirely dispensed with, the Directors have thought it prudent to be left to be determined by a longer experience of

the effect, of the changes which have been made in the mode of doing their business.

The Directors have strongly felt the obligation resting upon them to manage the affairs of the Corporation with all the economy consistent with the safe and efficient working of the road, and they believe that, under the intelligent and faithful management of the superintendent, this object has been obtained.

As, however, this is a subject which has of late attracted much of the public attention, an account of the force employed in the business of the road, and the amount paid to those in its service is herewith given. This will enable the stockholders to judge, by comparison with other roads, or otherwise, whether any saving can be judiciously made in this department of our expenditures.

For the Directors,

C. H. WARREN, *President.*

BOSTON AND PROVIDENCE RAILROAD OFFICIAL ORGANIZATION.

Numb'r of Officers	Service.	Amount Paid.	Per ann. or otherwise	Remarks.
1	President, ...	2,000 00	Per ann.	
1	Superintendent, ...	3,000 00	"	
1	Treasurer, ...	1,500 00	"	
1	Treasurer's Clerk, ...	700 00	"	
1	Super.'s, "	360 00	"	
1	Supt. of Transp. in Boston, ...	1,500 00	"	
1	" " Providence, ...	1,000 00	"	
2	Ticket Clerks, ...	600 00	"	
3	Station Baggage Masters, ...	83 83	Per diem.	Average.
6	Freight Clerks, ...	527 91	" ann.	"
25	Laborers in Freight Department, ...	1 00	" diem.	
4	Night Watchmen, ...	1 00	"	
2	Police Officers, ...	38 38	"	Average.
9	Way Agents, ...	377 77	" ann.	"
16	Laborers on Wood and Water, ...	1 00	" diem.	
6	Switchmen, ...	1 00	"	
13	Gate and Flagmen, ...	260 00	" ann.	Average.
8	Conductors, ...	539 00	"	"
12	Brakemen, ...	1 00	" diem.	
10	Enginemen, ...	648 25	" ann.	Average.
10	Firemen, ...	1 00	" diem.	
1	Superintendent of Machine Shop, ...	1,500 00	" ann.	
31	Mechanics, Wood and Iron, ...	1 25	" diem.	
		to 2 00		
5	Supt. of Road Repairs, ...	540 00	" ann.	Average.
4	Carpenters, "	1 25	" diem.	
26	Laborers, "	1 00	"	
1	Fruit Agent, ...	40 00	month.	Employed
1	Train Baggage Master, ...	400 00	" ann.	in sum. mos

REPORT OF THE EXAMINING COMMITTEE OF THE STOCKHOLDERS OF THE BOSTON AND PROVIDENCE RAILROAD.

At the completion of a mature and satisfactory examination of the whole property of the Boston and Providence Railroad Corporation, together with a critical investigation into the system of management in its apparently complex, yet orderly operations, the Committee charged with that duty, respectfully submit the following Report:—

With a view to clearly understanding the real condition of the Road,—the various stations for public accommodation,—the protection and transportation of freight, &c., have been visited deliberately, and the manner of transacting business carefully observed. Further, the details peculiar to each and all the different offices, at various points, were also separately considered. The books, official records and papers were freely brought forward, that the Committee might have a distinct idea of the character of the receipts and expenditures. In short, whatever was deemed of importance in conducting the inquiry, from the receiving clerk's to the treasurer's accounts, was unhesitatingly placed at their disposal. Such unreserved frankness in all the officers, of every grade, was a gratifying evidence of their zeal and conscious rectitude. The avenues of disbursement

necessarily belonging to a great institution, as well as the sources of its income, were scrutinized, with reference to condemning faults, and holding up to admiration, whatever should meet their thorough approbation.

At the conclusion of these investigations, the Committee is convinced that the true value and flattering prospects of this Road are neither properly estimated by the general public, or appreciated by capitalists. In the constitution of things, the having an enterprising, thriving city at each terminus—one of which is evidently predestined to be the unrivalled metropolis of the New England States, ensures an increasing local patronage in all coming years, independent of a certain amount of long travel to and from New York. This circumstance must ultimately give a permanent, standard value to the stock, and it will be worth more and more, in proportion to the increase of population, the activity, productive skill of the people, and the constantly developing resources of the country.

It was not thought to be the province of the Committee to furnish statistical representations of the exact amount of money distributed over the road in the form of cars, building materials, edifices, engines or lands, because it exclusively devolves upon the Board of Directors to perform that duty, should it be required of them. The actual present state and not the past, has engaged their attention.

Have the Directors fulfilled the just and reasonable expectations of the shareholders? Have they conducted the financial and other concerns of the Boston and Providence Railroad Company judiciously? These questions are asked—and the Committee feel bound to answer them.

To the apprehension of the Committee, they have faithfully executed the trust reposed in them. No body of competent, independent men could have conducted the machinery of a Corporation of such magnitude, with a more marked degree of prudence. Strict accountability and economy is not only enjoined on every person in their service, but strenuously enforced. Each one renders a daily return to the proper office, of his doings, and so rigidly are the outgoes and income registered, that an error of a few cents is at once detected, and the place ascertained where it occurred.

Those most familiar with Railroad concerns, concur in lamenting the apparent impossibility, thus far, of ascertaining to what extent peculations are sometimes practised by dishonest conductors. Various schemes have been devised, but they have proved abortive. Very much must depend on the sagacity of those who appoint them, in giving employment to those only, who are well recommended. Frequently changing them from one train to another, is thought to give an opportunity for comparing the average receipts from way stations, and thus a probable clue may be obtained to the true average productiveness of incidental travel, for which payment is collected in the cars. One of the best protections against dishonesty in those who have it in their power to practice it under such circumstances, is to give such compensation for their services, as to create a strong sense of moral obligation. Encouragement exercises a vastly stronger influence over the minds of dependants, than threatened penalties for the infraction of a law.

By comparing the methods of conducting the multiform business transactions on this Road, with

others standing well with the community, a preference is given to this by the Committee, without a division of sentiment. It is perfectly simple, exact, and not liable to mistakes. Although analogous to the system adopted on the Eastern, it is superior, from the circumstance that whatever is done through the day, is finished, by being settled at night. Hence bills are not permitted to accumulate of any kind, for or against the Corporation ; and hence there are no obscurities or perplexities from that source.

With respect to the administration of the Directors, the past year, all must be satisfied. They are gentlemen of tried fidelity in society. Without compensation, they have given their labor, and the benefits of an active mercantile experience, to the best interests of the Road. Their policy meets the approbation of the public, while their firmness, and personal exertions to sustain the good name of the Corporation—to increase its resources and diminish the liabilities, through an uncommon struggle in the monetary affairs of the whole commercial world, entitle them in a special manner to the thanks and consideration of those who own the property. By the vigilance of the President, in anticipating wants and contingencies, having an origin in the new constructions now in progress towards completion, money was promptly procured, and only in one single instance, was the rate of interest above six per cent. This fact illustrates, tact in emergencies, and the soundness and credit of the Corporation over which he presides.

Large sums have been expended both at Providence and Boston, for the erection of extensive depots, of a desirable durable character, in connection with other outlays which were obviously required to

keep pace with the rapid increase of business. Without proper accommodations, there would be no hope of patronage. Those improvements were indispensably necessary.

A new section of Road, too, was equally indispensable, to meet a growing demand at Pawtucket. A connection with the Stonington Road, at the Cove, in Providence, was an excellent measure, as it was a means of doing away with an expensive ferry, while a valuable union was formed, that enables the New York travel to move with extreme rapidity and facility without the hazard of interruptions or detentions incident to a huge ferry-boat, through the inclemencies of winter.

No Railroad can succeed satisfactorily, without the untiring oversight of a Superintendent. He is the grand regulator of all the forces at the disposal of the Company. His course either renders it unpopular, or elevates its reputation. There must be an undeviating system of timing, for the movement of every locomotive. Without order, life, the most precious boon, would be periled at every revolution of a wheel. Discretion, sound judgment in conducting negotiations, making purchases, keeping the equipments in a safe, working condition, and finally in maintaining a perpetual watch over the whole, without slumbering upon his post, is absolutely essential to personal safety in passing over every inch of rail within his jurisdiction.

This road is particularly fortunate in having the efficient services of an industrious, competent, energetic officer in the present superintendent, who has filled this station for nearly the whole period from the commencement of the operations of the Road. To a thorough knowledge of every department con-

fided to him, he unites the science and practical skill of an accomplished engineer. Officiating, therefore, in a two fold capacity, the Committee are gratified with this opportunity of expressing the estimation in which they hold that long tried servant.

In reviewing the ground over which they have conducted their researches, the Committee find abundant cause for encouragement; and such is the true aspect of the domain that has been surveyed, their inquiries are now terminated, with a conviction, that all is well, and doing well.

Trusting that no further expenditures may be suggested for Branches or buildings, and clearly discovering that the custom of the Road will clear it of all and every embarrassment, and prove it to be excellent property through all the changes and vicissitudes of coming years, the Committee here close their labors,—gratified with what they have discovered, and the courtesies they have received.

J. V. C. SMITH,
ISAAC EMORY.

Boston, June 6th, 1849.

REPORT
OF THE
BOARD OF DIRECTORS

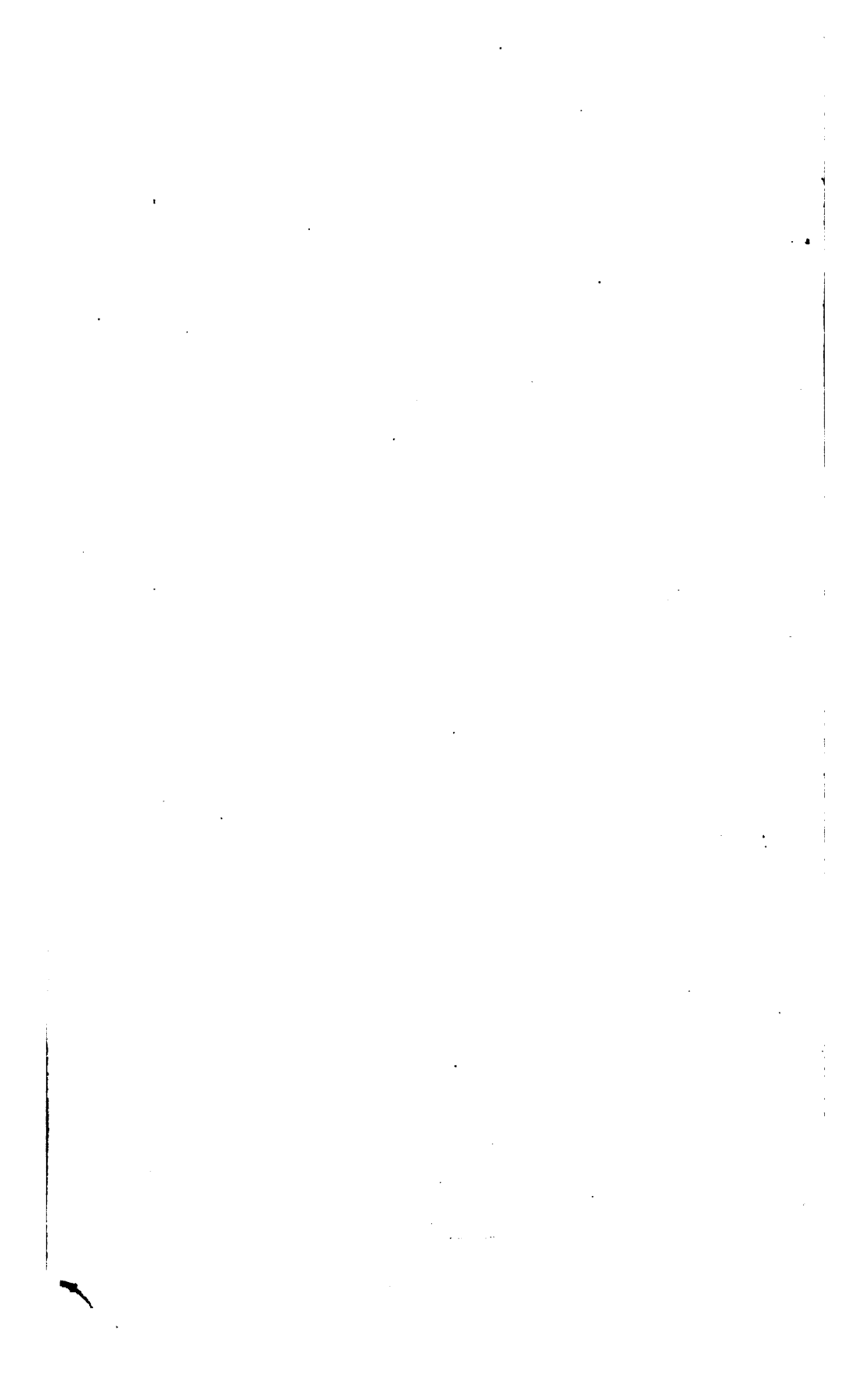
OF THE
Boston and Providence Railroad
CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1875.

PRESENTED AT THE
ANNUAL MEETING, NOVEMBER 17, 1875.

BOSTON:
1875.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.



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Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 17, 1875.

To the Stockholders :

THIS, the Annual Report of the affairs of the Corporation for its fortieth financial year,* 1874-5, has been prepared under the supervision of the Directors in the absence of your President, but it is hoped that it may be brought to your immediate notice by President Clifford, who will doubtless be as warmly welcomed home by you, after his brief foreign tour, as he will be by all your officers and agents. It is further hoped, that he will reach our shores in season to enable him to make some personal report, and to add such comments as may be suggested by this business statement.

The receipts of the road for the past year have fallen off in a marked degree, from those of the three previous years, and despite the continued

* This is not the fortieth report published, as for several years in the early days of the road, no reports were printed.

large reduction made in expenses, amounting to \$67,627.66, the final balancing of accounts on the thirtieth day of September, when the financial year closed, showed that the net earnings were \$364,782.20, only \$4,782.20 more than nine per cent. on the capital stock. As a dividend of five dollars on a share had been made in the spring, one of four dollars was declared for the last six months. Could the course of business have been foreseen, it would have been better to have made the two dividends four and one-half dollars each, but there was a strong belief that the increase of receipts from April 1st, to October 1st, would be such as to assure the usual division for the year.

As it is, nine per cent., all that has been earned has been divided.

Warned by the experience of other Corporations, representing various interests, that have strained dividends to the final detriment of Stockholders, and as our expenses have been brought to a point below which they cannot be reduced by any great amount, consistently with safety and efficiency, it was thought to be both injudicious and imprudent, to make any draught on the reserve of this short line, to eke out a larger dividend. Indeed, the sum to the credit of income account on our books, is represented by fixed property, essential to the prosperity of the Company, and it ought not to be called upon, excepting as an offset to direct loss of assets, or as an aid to credit.

The business of the year is given in the accompanying tables, furnished by the Treasurer; the general result being as follows:—

The gross receipts for the fiscal year 1873-4 amounted
to \$1,687,279.19

While those for the current year 1874-5,
were 1,581,258.31

Showing a falling off in our receipts
for this year, of \$106,020.88

In the corresponding period 1873-4,
the expenses were \$1,284,103.77

And for the current year 1874-5, they
were 1,216,476.11

Showing a reduction in our expenses
for this year, of \$67,627.66

The receipts of last year (1873-4,) were \$134,828.99 less than those of 1872-3, and the reduction in expenses for the corresponding period, was \$140,899.31.

There has disappeared from our assets an item of \$15,000, represented by one hundred and fifty shares of the Mansfield and Framingham Railroad Co., subscribed for in 1869, and thought to be worth what they stood at on our books.

The Boston, Clinton and Fitchburg Railroad Co., ~~was~~ ^{were} authorized, by an act of the legislature, to consolidate the Mansfield and Framingham road with

their line. This was done by a vote of the stockholders, at a meeting called for Monday morning, May 31st, at Fitchburg. In accordance with the terms of the circular printed below* our stock was converted, and then sold, at a net loss of \$9,882. This loss was charged to income account, and is in no other way connected with the business transactions of the year.

*** MANSFIELD AND FRAMINGHAM RAILROAD CO.**

TREASURER'S OFFICE,

BOSTON, MASS., JUNE 1ST, 1875.

This Corporation having consolidated, united with, and become a part of the BOSTON, CLINTON AND FITCHBURG RAILROAD CO., will cease to exist as a separate Corporation from and after this date.

In accordance with the Articles of Consolidation agreed upon by a Committee of the Directors, and ratified and confirmed by a Special Meeting of the Stockholders, held May 31st, 1875, holders of stock in this Corporation can, any time before July 1st, 1875, surrender their stock to the Treasurer, S. W. HUNTLEY, Fitchburg, and upon payment of Forty Dollars on each and every share, shall be entitled to receive the same number of shares of stock of the BOSTON, CLINTON AND FITCHBURG RAILROAD CO. All exchanges made before July 1st, will be entitled to a Dividend of Three Dollars per share, due and payable July 1st. Holders of Mansfield and Framingham Railroad Stock will also have the right to surrender and exchange, as above, from July 1st, 1875, to January 1st, 1876, by paying six per cent. interest upon the Forty Dollars from July 1st until the time of payment, provided said payment is made on or before January 1st, 1876. Stockholders can send the Certificates direct to S. W. HUNTLEY, Treasurer of the Boston, Clinton and Fitchburg Railroad, Fitchburg, Mass., signing in blank on the back of each Certificate, and enclosing Check payable to his order, for the amount required, or can make the same exchange and payment at the Office of the Company, No. 17 United States Hotel Block, Boston.

All stock unexchanged as above, will become and remain common or unpreferred stock of the Boston, Clinton and Fitchburg Railroad Co., called Agricultural Branch Railroad Stock, upon which no dividends have heretofore been declared. As the Boston, Clinton and Fitchburg Railroad Co. expect to continue the payment of regular dividends upon the preferred stock, it is believed to be for the interest of the Mansfield and Framingham Stockholders to make the exchange and payment as above set forth.

HOSEA HYDE, TREASURER.

A suit for injuries received in 1873, after trial, resulted adversely to the Corporation, and the award of the jury and legal charges, amounting to \$3,899.66, were paid in May last. This sum is included in the item of gratuities and damages.

Two passengers have been killed during the year; one by jumping from a train while at full speed; one by attempting to get on to a train while in motion.

There have been eight other fatal accidents, all caused by individual carelessness in walking on, or in crossing the track, for which the road has in no instance been held culpable.

The report of the Directors to the Railroad Commissioners shows the number of miles run by our trains during the year to have been 800,269, against 789,468 in the last previous year. The whole number of passengers carried this year 3,524,377, against 3,486,280 for the former period. The whole number carried one mile 38,743,664, against 38,625,149, and the number of tons of freight carried this year 691,318, against 738,668. Of the \$106,020.88 in the reduction of our receipts, \$93,491.38 of it is due to the diminution of our freight business, and only \$5,763.08 to the falling off of receipts from passengers.

With eighty-eight miles of double main track, we now have seventy laid with steel rails, as against fifty-nine reported a year ago, leaving eighteen miles to be so renewed.

The road bed was never in better condition, and our equipment, with the exception of "postal cars," is equal to any increase of business that we are likely to have for several years to come.

During the coming year, it is proposed to rebuild the passenger station at Roslindale, and with the assent of the Providence and Worcester Railroad Co., to build conjointly with them, on the line of our common track, a new freight house at Pawtucket.

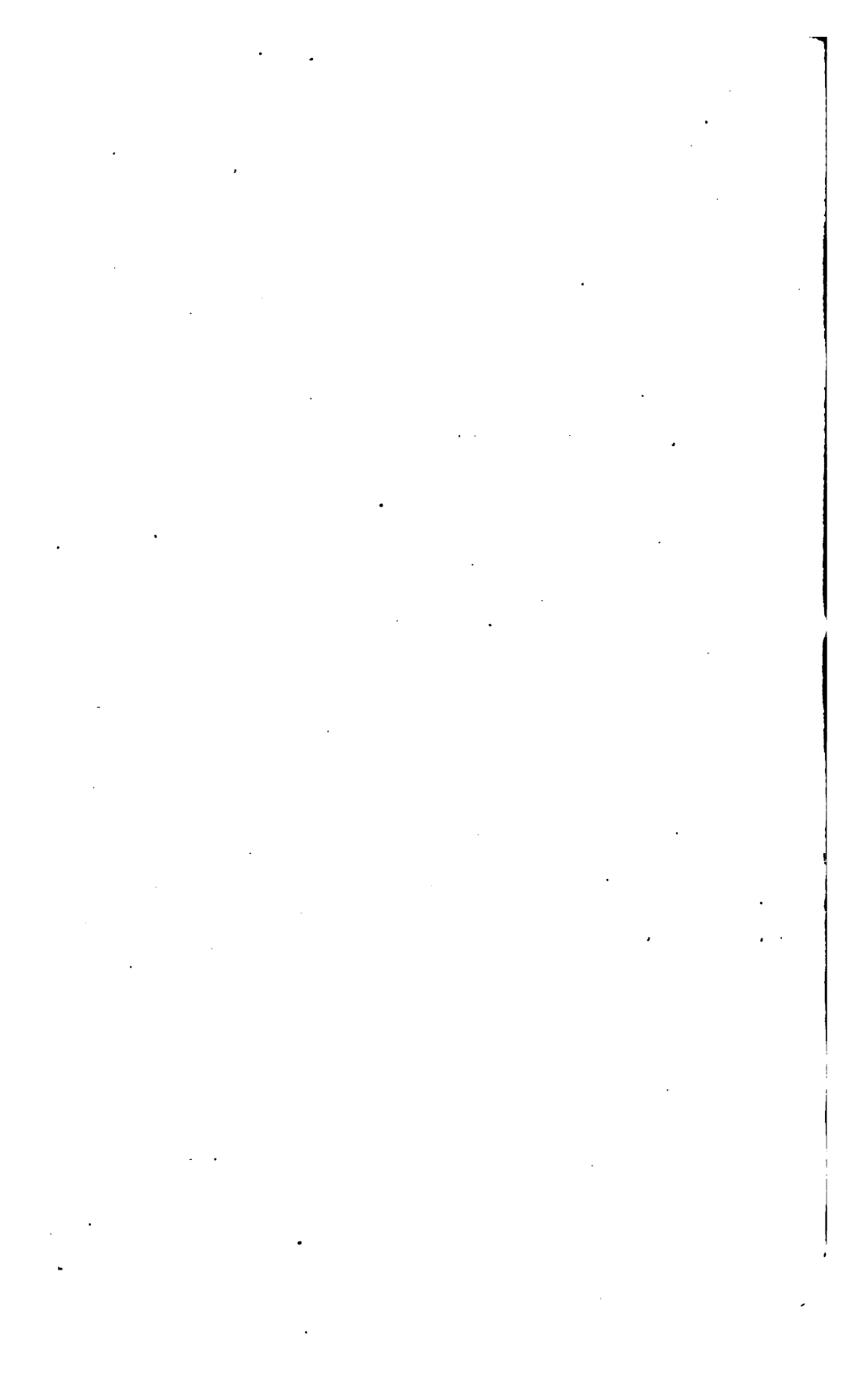
As similar experiments are being made elsewhere, it may be well to mention that in May last, leave was given to Messrs. Seagrave & Robinson, to alter the old engine "Norfolk" at their own expense, with a view of substituting coal oil, (petroleum) for coal, as a generator of steam in locomotives. On the 27th of September, a train was run from Boston to Canton and back to Readville, a distance of twenty miles, with this engine, burning petroleum. At a later date, the "Norfolk" was set fire to by the combustible fuel, while further adaptations were being tested. Little injury was done to the locomotive, but the experimenters were somewhat singed. Apparently encouraged by this experience, they are still engaged in the endeavor to carry their theories to a safe and practical result.

We take this opportunity of acknowledging the great assistance received during our term of especial responsibility, from Superintendent Folsom, from Mr. Torrey, the Treasurer, and from Mr. Chace

the Assistant Superintendent at Providence, while the zeal, interest and attention to duty, generally shown by the servants of the Corporation during the same period, have been peculiarly noticeable.

Respectfully Submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
GEORGE W. HALLET,		
T. P. I. GODDARD,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		



BOSTON AND PROVIDENCE RAILROAD CORPORATION.

TREASURER'S OFFICE, OCT. 29, 1875.

To the President and Directors :

GENTLEMEN :—I submit herewith the following tables from the Treasurer's Books, for the period commencing October 1, 1874, and ending September 30, 1875, and am

Respectfully,

B. B. TORREY,

Treasurer.

DR.

Business for the year

COAL.....	\$ 115,402.14
REPAIRS OF RAILROAD.....	111,964.91
SLEEPER ACCOUNT.....	28,240.34
NEW STEEL RAILS.....	82,067.05
REPAIRS OF LOCOMOTIVES.....	50,833.66
RENEWALS AND REPAIRS OF PASSENGER CARS.....	34,730.47
REPAIRS OF FREIGHT CARS.....	29,952.34
REPAIRS STATIONS AND FIXTURES.....	49,430.68
NEW BRIDGES AND REPAIRS.....	53,391.62
FENCE ACCOUNT.....	6,390.57
SNOW ACCOUNT.....	4,766.79
GRATUITIES AND DAMAGES.....	7,445.05
PASSENGER DEPARTMENT.....	195,178.40
FREIGHT DEPARTMENT.....	181,409.51
MISCELLANEOUS EXPENSES.....	25,627.05
SWITCH AND GATEMEN.....	42,210.99
LOCAL AND STATE TAXES.....	83,218.22
OIL AND WASTE.....	13,460.32
TELEGRAPH EXPENSES.....	1,405.20
INSURANCE AND FIRE DAMAGES.....	16,896.58
INTEREST PAID.....	82,454.22
	\$1,216,476.11
BALANCE, carried to Income Account.....	364,782.20
	\$1,581,258.31

DR.

Income or

1875.		
Sept. 30.	To Dividend, five dollars per share, on 40,000 shares paid May 15, 1875.....	\$200,000.00
.		
" "	" Dividend, four dollars per share, on 40,000 shares payable November 15, 1875.....	160,000.00
.		
" "	" Loss on 150 shares, Stock of Mansfield and Framingham R.R. sold during the year.....	9,882.00
.		
" "	" Balance to new account.....	459,178.02
.		
		\$829,060.02

Surplus Account.

CR.

1875.

Sept. 30.	By Balance of Surplus.....	\$464,277.82
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"	"	"	Net earnings for the year, ending September 30, 1875, as per statement.....	364,782.20
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\$829,060.02

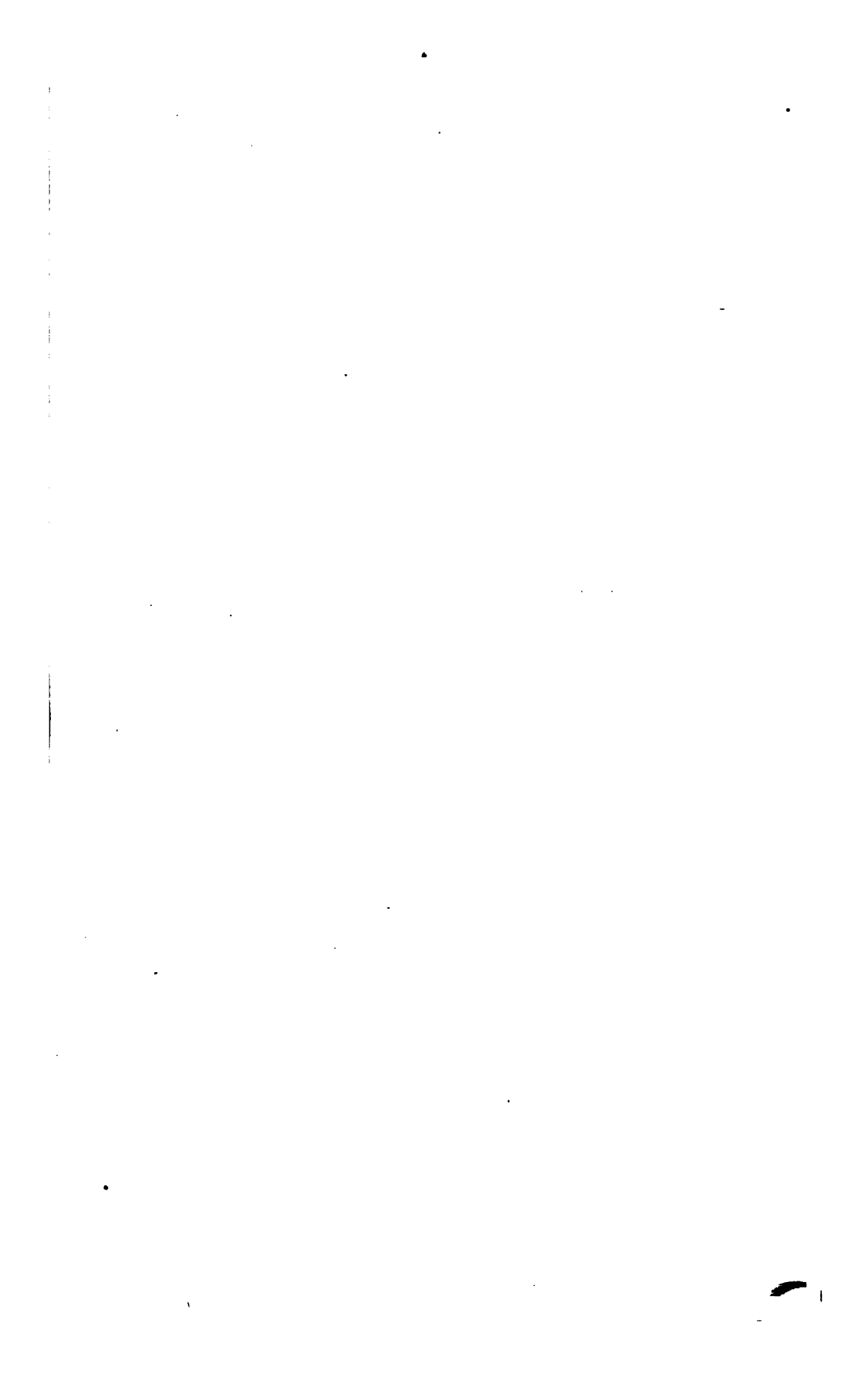
1875.

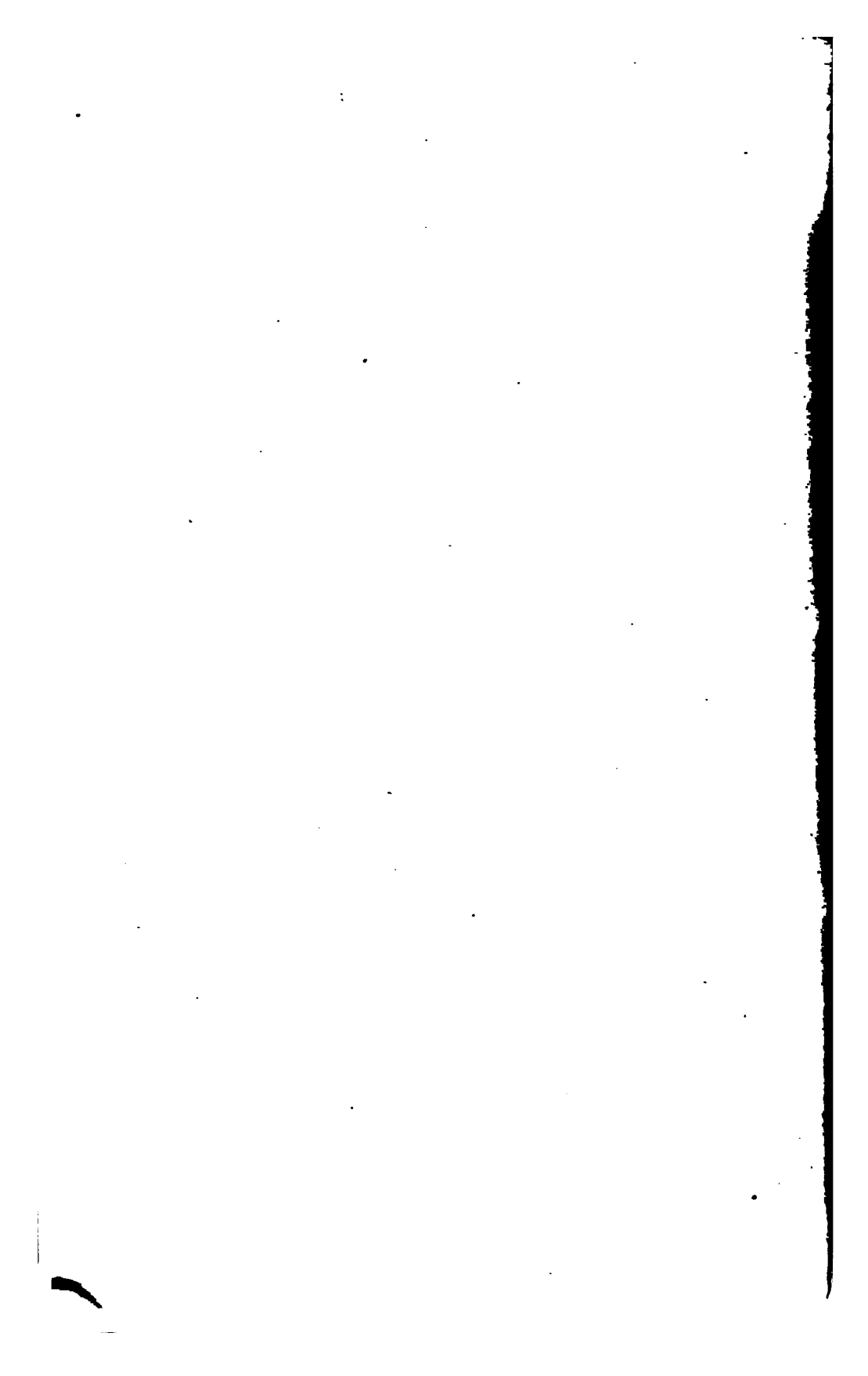
Oct. 1.	"	Balance as per Ledger account.....	\$459,178 02
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DR.	<i>Trial Balance, September 30, 1875.</i>	CR.
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Construction and Equipment, . . .	\$4,000,000.00	Capital Stock, ...	\$4,000,000.00
Stoughton Branch, ...	85,400.00	Seven per cent. Bonds, due 1893, . .	500,000.00
Providence, Warren and Bristol } Railroad Stock, ...	283,499.27	Notes Payable, ...	1,009,000.00
Fall River, Warren and Providence Railroad Stock, Bonds and Equipment, ...	350,395.36	Unclaimed Dividends, ...	7,570.00
Real Estate, ...	212,168.69	Dividend No. 78, due Nov. 15, 1875.	160,000.00
Cash and Cash Funds, ...	33,069.93	Balances due to other Roads, etc., . .	5,906.98
Notes Receivable, ...	13,480.03	Income Account, ...	459,178.02
Improvement Account, including New Passenger Station in Boston, . .	736,329.52		
Materials on Hand, ...	228,877.27		
Balances due from other Roads, etc., .	198,434.93		
	<u>\$6,141,655.00</u>		<u>\$6,141,655.00</u>

B. B. TORREY, *Treasurer.*





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REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1876.

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 15, 1876.

BOSTON:

1876.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

REPORT
OF THE
BOARD OF DIRECTORS
OF THE
Boston and Providence Railroad
CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1876.

PRESENTED AT THE
ANNUAL MEETING, NOVEMBER 15, 1876.

BOSTON:
1876.
JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 15, 1876.

To the Stockholders:

IN submitting the following statement of the operations of your road for the year ending September 30th, 1876, the directors are thoughtfully reminded of the loss which has fallen to the Corporation through the death of the Honorable John Henry Clifford, who for a series of nine years and some months had been your President, succeeding the late Judge Warren.

Shortly after his death, which occurred at New Bedford on Sunday morning, the second day of January of the current year, in the sixty-seventh year of his age, the directors, acting for you as for themselves, placed on their records and communicated to the family of Governor Clifford, their sense of his very marked and valuable services. Your attention will be called to this record verbally.

The falling off in receipts which has been going on for the last four years, still continues, and has been met in part by a further reduction in expenses, warranting the declaration of two four per cent. dividends, amounting to \$320,000, which sum represents the net earnings of the year within \$1,714.43.

The general result of the year's business, is given in the following tables, furnished by the Treasurer:—

The gross receipts for the fiscal year 1874-5 amounted to	\$1,581,258.31
While those for the current year 1875-6, were	1,467,759.56

Showing a falling off in our receipts of	\$113,498.75
--	--------------

In the corresponding period 1874-5, the expenses were	\$1,216,476.11
And for the current year 1875-6, they were	1,149,473.99

Showing a reduction in our expenses of	\$67,002.12
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The receipts of the year (1873-4,) were less than those of 1872-3, and the reduction in expenses for the corresponding period, was	\$134,828.99 140,899 31
--	----------------------------

The receipts of the year 1874-5, were	\$106,020.88
less than those of 1873-4, and the	
reduction in expenses for the cor-	
responding period, was	67,627.66

It appears as above, that our receipts
for *this* year have been less than the
last by \$113,498.75
and the expenses less by 67,002.12
while to earn the smaller sum, forty-
six hundred more miles have been run.

This steady decrease is doubtless to be accounted for in part, by the depressed condition of business and the consequent falling off of local travel, but it is in part due to the demand for lower rates of freight, and especially, to the growing competition which meets us on every side.

It may be doubted that a narrow gauge road will be built between Boston and Providence during the next few years, as being too costly an experiment; but your directors would refer to the fact, that ground has already been broken for a road of regular gauge between Franklin and Valley Falls, known as the Rhode Island and Massachusetts Railroad, making a direct competing line to Providence, four miles longer than your route.

According to agreement, the Fall River, Warren and Providence Road, has been transferred to the Old Colony Corporation, they paying cost and inter-

est for the same. Of the \$317,645.09 representing the original cost, \$215,000 have been applied to the extinguishment of your debt, all that could be controlled, and \$77,767.29 of this repayment, is represented by Union Freight Railroad Stock, the holding of which was authorized by the Stockholders at the last annual meeting, and has subsequently been confirmed by the Legislature.

The report of the directors to the Railroad Commissioners shows the number of miles run by our trains during the year to have been 804,871, against 800,269 the previous year. The whole number of passengers carried this year 3,475,378, against 3,524,377 for the former period. The whole number carried one mile 37,948,007, against 38,743,664, and the number of tons of freight carried this year 589,643, against 691,318.

In the reduction of our receipts, \$50,531.82 is due to the diminution of our freight business, and \$66,935.63 to the falling off of receipts from passengers.

SUMMARY.

More miles run the present year as compared	
with the last, ...	4,602
Less number of passengers carried the present	
year as compared with the last, ...	48,999
Less number of passengers carried one mile	
the present year as compared with the last,	795,657
Less tons of freight carried the present year	
as compared with the last, ...	101,675

There have been but three passengers injured. Two fatally, by leaving the cars while in motion ; the other seriously, by jumping from an inward Dedham train, directly in front of an outgoing train, at the dangerous Boston and Albany Crossing. There were seven accidents caused by persons carelessly walking upon or crossing the tracks. Of these, five proved fatal.

One employé of the road has been injured, while in the discharge of duty.

Warned by the freshets of last spring, whereby the giving way of a dam near Worcester brought great disaster to the neighborhood, and seriously damaged the track of the Boston and Albany Road, a careful inspection was made by engineers, experts and by your directors in person, of the abutments and piers which support the wooden bridge over the River Blackstone, at Valley Falls. The engineers reported that the masonry was not fully equal to the strain caused by the quick and heavy traffic of to-day, and might not stand the rush of any collection of débris brought against it by the breaking of some of the numerous dams on the river above. There could be no hesitation in at once undertaking an unexpected and expensive work. One abutment, and the two most important piers in the bed of the river, have been renewed in a thorough and substantial manner, and next spring, the other abutment and piers will be rebuilt. This is the longest bridge on the line

of the road, having a span of 375 feet. It should be renewed with iron, and it may be well to avail ourselves of the present low prices, to complete this important work.

An iron bridge has been substituted for one of wood, at the Bussey Crossing. The new brick station at Roslindale is about completed. The changing of the bed of Stony Brook near the Forest Hills station by the City of Boston, has led to greater facility in operating the branch line which enters the main track at this point, besides doing away with the dangerous openings which have heretofore existed. Improvements have been made at Forest Hills and Jamaica Plain, by the erection of protecting sheds for passengers opposite the station houses, and the approaches to the Jamaica Plain station have been graded and paved, since the close of the financial year. The passenger station at Providence, has been repainted and cleansed.

The open winter was favorable to the road bed, and but four and a half miles of new track have been relaid with steel. There now remain thirteen and a half miles of the eighty-eight miles of double main track, to be so renewed.

As is generally known, the Stonington Steamboat Company propose hereafter, to run their commodious and powerful boats, the Massachusetts (now in course of construction) and the Rhode Island, between Providence and New York direct, during the spring

and summer months. For this business, a new locomotive has been provided, named after a former and highly esteemed director of this road, the late George R. Russell.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
GEORGE W. HALLET,		
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		

BOSTON AND PROVIDENCE RAILROAD CORPORATION.

TREASURER'S OFFICE, OCT. 31, 1876.

To the President and Directors :

GENTLEMEN :—I submit herewith the following tables from the Treasurer's Books, for the period commencing October 1, 1875, and ending September 30, 1876, and am

Respectfully,

B. B. TORREY,

Treasurer.

DR.

Business for the year

COAL.....	\$ 100,968.81
REPAIRS OF RAILROAD.....	117,557.24
SLEEPER ACCOUNT.....	21,863.50
NEW STEEL RAILS	64,529.40
REPAIRS OF LOCOMOTIVES.....	38,383.12
RENEWALS AND REPAIRS OF PASSENGER CARS.....	33,215.90
REPAIRS OF FREIGHT CARS.....	24,654.81
REPAIRS STATIONS AND FIXTURES.....	64,904.92
NEW BRIDGES AND REPAIRS.....	32,714.73
FENCE ACCOUNT.....	5,904.96
SNOW ACCOUNT	654.28
GRATUITIES AND DAMAGES.....	2,351.71
PASSENGER DEPARTMENT.....	200,492.30
FREIGHT DEPARTMENT.....	172,247.52
MISCELLANEOUS EXPENSES.....	28,278.94
SWITCH AND GATEMEN.....	43,352.86
LOCAL AND STATE TAXES.....	72,152.21
OIL AND WASTE.....	12,443.99
TELEGRAPH EXPENSES.....	1,314.06
INSURANCE AND FIRE DAMAGES.....	11,464.87
INTEREST PAID.....	100,023.86
	\$1,149,473.99
BALANCE, carried to Income Account.....	318,285.57
	\$1,467,759.56

ending September 30, 1876.

CR.

PASSENGER RECEIPTS, Local.....	\$631,509.24
" " Connecting Roads	198,959.16
	\$830,468.40
FREIGHT " Local	\$288,364.96
" " Connecting Roads.....	280,283.91
	568,648.87
RENTS	19,003.07
EXPRESS	33,448.68
MAILS.....	7,298.31
INTEREST.....	8,892.23
	\$1,467,759.56

DR.

Income or

1876.

Sept. 30. To Dividend, four dollars per share, on 40,000 shares
 paid May 15, 1876..... \$160,000.00

" " " Dividend, four dollars per share, on 40,000 shares
 payable November 15, 1876..... 160,000 00

" " " Balance to new account..... 457,463.59

\$777,463.59

Surplus Account.

CR.

1876.

Sept. 30.	By Balance of Surplus.....	\$459,178.02
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"	"	"	Net Earnings for the year, ending September 30, 1876, as per statement.....	318,285.57
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\$777,463.59

1876.

Oct. 1.	"	Balance as per Ledger Account.....	457,463.59
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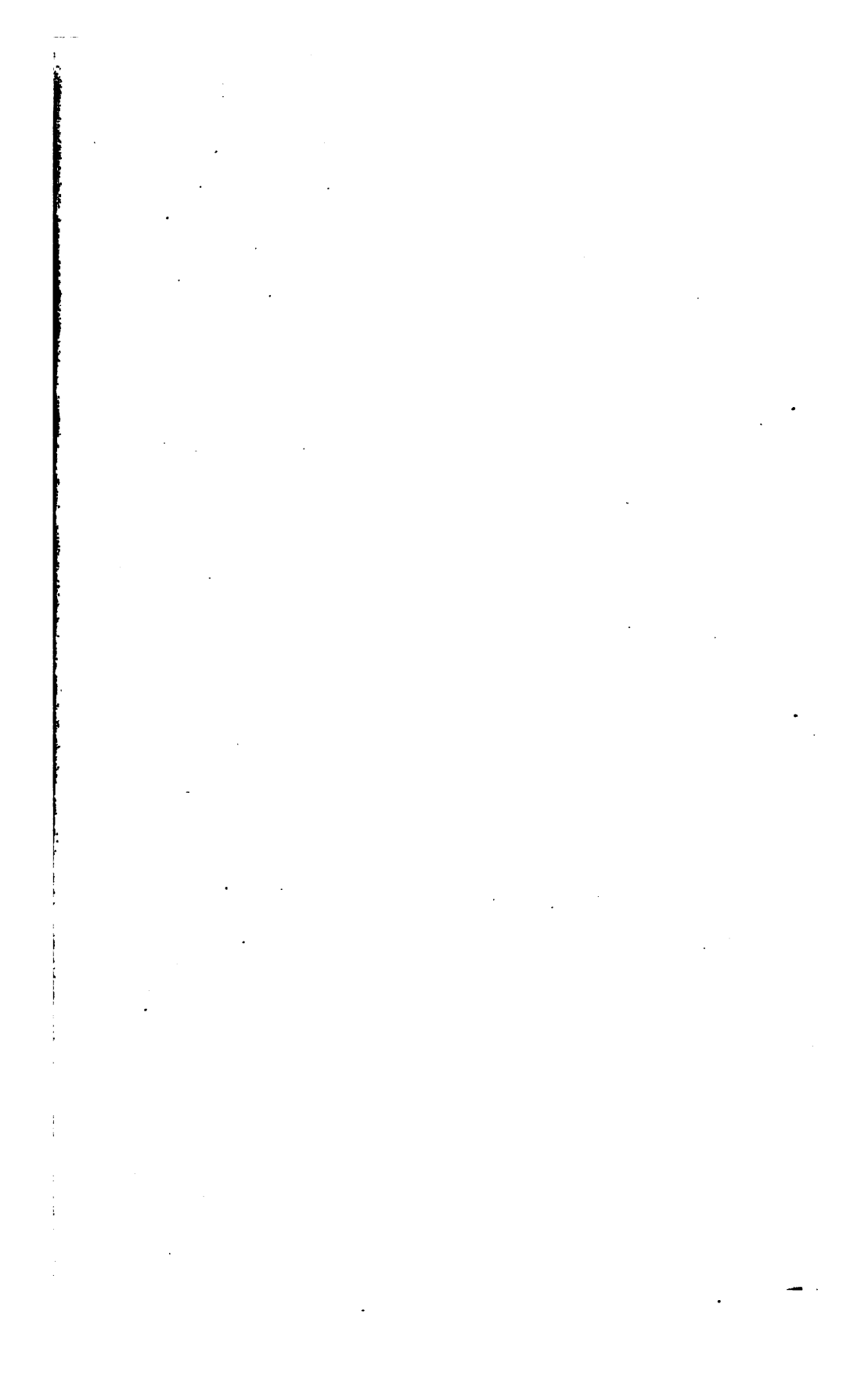
Dr.

Trial Balance, September 30, 1876.

Cr.

Construction and Equipment, . . .	\$4,000,000.00	Capital Stock, ...	\$4,000,000.00
Stoughton Branch,.	85,400.00	Seven per cent. Bonds, due 1893, . .	500,000.00
Providence, Warren and Bristol } Railroad Stock, ...	293,679.27	Notes Payable,.	794,000.00
Union Freight Railroad Company } Stock, ...	77,767.29	Unclaimed Dividends, ...	5,761.00
Real Estate,.	212,168.69	Dividend No. 80, due Nov. 15, 1876,	160,000.00
Cash and Cash Funds, ...	184,564.55	State Tax, ...	34,848.45
Notes Receivable, ...	42,730.03	Balances due to other Roads, etc., .	13,813.18
Improvement Account, including New } Passenger Station in Boston, . }	735,305.52	Income Account, ...	457,463.59
Materials on Hand, ...	203,870.83		
Balances due from other Roads, etc., .	130,400.04		
	<u>\$5,965,886.22</u>		<u>\$5,965,886.22</u>

B. B. TORREY, *Treasurer.*



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Sturtevant & Co

REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1877.

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 21, 1877.

BOSTON:

1877.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

1870

1871

1872

1873

1874

1875

1876

REPORT
OF THE
BOARD OF DIRECTORS
OF THE
Boston and Providence Railroad
CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1877.

PRESENTED AT THE
ANNUAL MEETING, NOVEMBER 21, 1877.

BOSTON:
1877.
JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Boston and Providence Railroad Corporation.

THE Annual Meeting of this Corporation will be held at the Office of the Superintendent, at the Passenger Station, in Boston, on Wednesday, November 21, 1877, at eleven o'clock, A. M., for the choice of Directors ; to see if the Stockholders will authorize the Directors to renew any notes of the Corporation at present outstanding for such times and at such rates of interest as the Directors may deem expedient ; and for the transaction of such other business as may be brought before the meeting.

WINSLOW WARREN,

Clerk of Boston and Providence Railroad Corporation.

BOSTON, November 13, 1877.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 21, 1877.

To the Stockholders :

THE Directors respectfully submit the following report of the business of your road for the year ending September 30, 1877.

They regret to say that the falling off in receipts which has been noticed for the past five years, still continues.

The gross receipts of these years were as follows:—

1872,		\$1,716,399
1873,		1,822,108
1874,		1,687,279
1875,		1,581,258
1876,		1,467,759
For the year closing Sept. 30, 1877,	. .	1,373,361

There has been a very marked decrease in expenses in each of these years, as compared with the preceding ones, as has been indicated in the successive annual reports.

It will be seen that the receipts of the past year, 1876-7, were less than those of 1875-6, by \$94,398.

In the corresponding periods, the expenses were, for 1875-6, ... 1,149,473

For the current year, 1876-7, ... 1,125,407

Showing a reduction in expenses of . . . \$ 24,066

The falling off in gross receipts is likely to continue for some time longer, owing to many and varied causes.

The report of the directors to the Railroad Commissioners shows the number of miles run by our trains during the year to have been 803,067, against 804,871 the previous year. The whole number of passengers carried this year was 3,197,600, against 3,475,378 for the former period. The whole number carried one mile 35,995,043, against 37,948,007, and the number of tons of freight 631,850, against 589,643.

In the reduction of our receipts, the amount of \$59,442.14 is due to the diminution of our freight business, and \$30,112.15 to the falling off in returns from passenger traffic.

SUMMARY.

Less miles run the present year as compared	
with the last, ...	1,804
Less number of passengers carried the present	
year as compared with the last, ...	277,778
Less number of passengers carried one mile	
the present year as compared with the last,	1,952,964
More tons of freight carried the present year	
as compared with the last, ...	42,216

The accounts of the year have been made up very thoroughly and carefully. Two dividends of three per cent. each have been declared, free of taxation, amounting to \$240,000, while a surplus of \$7,953.77 was carried to the credit of profit and loss account. The State and local taxes amounted to a trifle more than one dollar and fifty cents on each share.

In 1873, the directors were authorized to issue one million of seven per cent. bonds, having twenty years to run, which with outstanding notes would have been more than ample to close up all indebtedness. Only one-half of these long bonds were issued, and the remainder of the debt was thrown into notes covering a series of years. This plan was adopted on the theory that as the notes fell due, they could probably be renewed at lower rates of interest, and that at times they might be temporarily, if not permanently reduced in amount. There has been no floating

indebtedness, these notes being held for the most part by savings banks or moneyed institutions in large amounts, and they mature as follows:—

1877, Notes,		\$227,000
1878, do		47,000
1879, do		100,000
1880, do		200,000
1881, do		120,000
1882, do		100,000
		\$794,000
1893, Bonds,		500,000
		<u>\$1,294,000</u>

Authority to renew such portion of these notes when they mature, as may be necessary, will be asked, in accordance with the notice given in the call for the Annual Meeting.*

*The Statute enacted in 1876, relating to the issue of bonds or notes, is as follows:—

ACTS AND RESOLVES, 1876.—CHAPTER 170.

Be it enacted, &c., as follows:—

SECTION 1. No railroad corporation chartered under the laws of this Commonwealth shall hereafter issue any bonds, coupon notes or other evidences of indebtedness payable *at periods of more than twelve months* from the date thereof, except as provided by section forty-nine of chapter three hundred and seventy-two of the acts of the year eighteen hundred and seventy-four.

Section forty-nine of chapter three hundred and seventy-two, acts of eighteen hundred and seventy-four, provides that any railroad corporation by a vote *at a meeting called for the purpose*, may issue bonds, etc.

The new bridge over the Blackstone River, at Central Falls, has been completed and subjected to severe tests. The entire cost will not exceed sixty-five thousand dollars, about equally divided between masonry and iron, while six years ago the estimated cost of the iron alone was sixty thousand dollars. It is a matter of congratulation that this important bridge has been so thoroughly rebuilt, and great credit is due to the Edge-Moor Iron Company, of Wilmington, Delaware, for the workmanship.

The necessity of this outlay will be apparent to any of the stockholders who were so unfortunate, during the past spring, as to be inconvenienced in their passage to or from New York, by the burning of the wooden Cos-Cob bridge on the line of the New Haven Railroad. The part destroyed was almost identical in length with the Central Falls bridge. As stated in the last report, the rebuilding of the piers and abutments was even more necessary than the replacing of the bridge proper. Forty thousand dollars of the cost of this new work have been charged directly to profit and loss, and the remaining cost, for the most part, has already been charged to expenses.

Ten miles of single track or five miles of double track remain to be renewed with steel rails on the main road-bed.

The line of larger boats from Providence to New York, which started in June last, proved to be very attractive and popular, and took its fair share of travel. It was closed for the season a month earlier

than was intended, owing to the disaster which befell the Massachusetts. This powerful steamboat is being most thoroughly repaired, and, without doubt, will be even more staunch than when first launched.

The Boston and Providence Railroad Corporation has no ownership of any description or nature in any steamboat, nor in the stock or bonds of any steamboat company, but it naturally takes a great interest in all such connecting lines.

It is proper to state that the greater efficiency of this, the original steamboat route between Boston and New York, was construed as a hostile attack by one of the competing lines. Consequently an agreement for the sustaining of freights at remunerative rates, was broken up, in April last, thirty days notice to that effect having been previously served upon us, and much of the business between Boston and New York is at present done at little profit, if not at a positive loss.

A direct competing line to Providence, four miles longer than your road, was opened in September last, over the Massachusetts and Rhode Island and Rhode Island and Massachusetts roads, leased to the New England Corporation, to which your attention was called last year.

The effects of this competition are not yet fully developed, and cannot be definitely estimated.

Since the close of our financial year, the Hon. Wingate Hayes, who for a long term was the sagacious and prudent Counsel of the Corporation in Rhode

Island, died very suddenly at his home in Providence, in the fifty-fifth year of his age. He had held prominent Civic, State and National offices of honor and trust, and the records of your directors bear testimony to the value of his services, and to their warm personal regard and friendship.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
GEORGE W. HALLET,		
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		

BOSTON AND PROVIDENCE RAILROAD CORPORATION.

TREASURER'S OFFICE, OCT. 31, 1877.

To the President and Directors:

GENTLEMEN:—I submit herewith the following tables from the Treasurer's Books, for the year ending September 30, 1877, and am,

Respectfully,

B. B. TORREY,

Treasurer.

DR.

Business for the year

COAL.....	\$ 91,093.33
PASSENGER DEPARTMENT.....	183,855.42
FREIGHT DEPARTMENT.....	140,088.06
REPAIRS OF RAILROAD.....	85,429.09
" LOCOMOTIVES.....	84,959.61
" PASSENGER CARS.....	62,990.95
" FREIGHT CARS.....	30,952.33
" STATIONS AND FIXTURES.....	56,423.48
" BRIDGES.....	31,086.52
" FENCES.....	8,598.22
SWITCH AND GATEMEN.....	42,009.41
MISCELLANEOUS EXPENSES.....	24,748.27
SLEEPER ACCOUNT.....	17,107.99
LOCAL TAXES.....	38,955.42
STATE TAX.....	23,306.68
GRATUITIES AND DAMAGES.....	3,437.89
OIL AND WASTE.....	11,545.96
RAIL ACCOUNT.....	61,023.49
INSURANCE AND FIRE DAMAGES.....	7,317.68
TELEGRAPH EXPENSES.....	1,990.47
SNOW ACCOUNT.....	6,148.14
ATTLEBOROUGH BRANCH RENT.....	11,308.41
INTEREST ACCOUNT.....	101,031.01
	\$1,125,407.83
BALANCE, carried to Profit and Loss Account.....	247,953.77
	\$1,373,361.60

ending September 30, 1877.

CR.

PASSENGER RECEIPTS, Local.....	\$601,781.69
“ “ Connecting Roads	198,574.56
	————— \$800,356.25
FREIGHT “ Local.....	\$280,125.12
“ “ Connecting Roads	229,081.61
	————— 509,206.73
RENTS.....	20,797.58
EXPRESS.....	36,101.82
MAILS.....	6,899.22
	—————
	\$1,373,361.60

DR.

Profit and

1877.

Sept. 30. To Dividend, three dollars per share, on 40,000 shares
 • paid May 15, 1877..... \$120,000.00

" " " Dividend, three dollars per share, on 40,000 shares
 payable November 15, 1877..... 120,000.00

" " " Worthless Accounts charged off 3,364.80

" " " New Iron Bridge at Central Falls, R. I. 40,000.00

" " " Estimated depreciation in Providence, Warren
 and Bristol Railroad Stock 28,289.27

" " " Balance to new account..... 393,763.29

\$705,417.36

Loss Account.

CR.

1877.

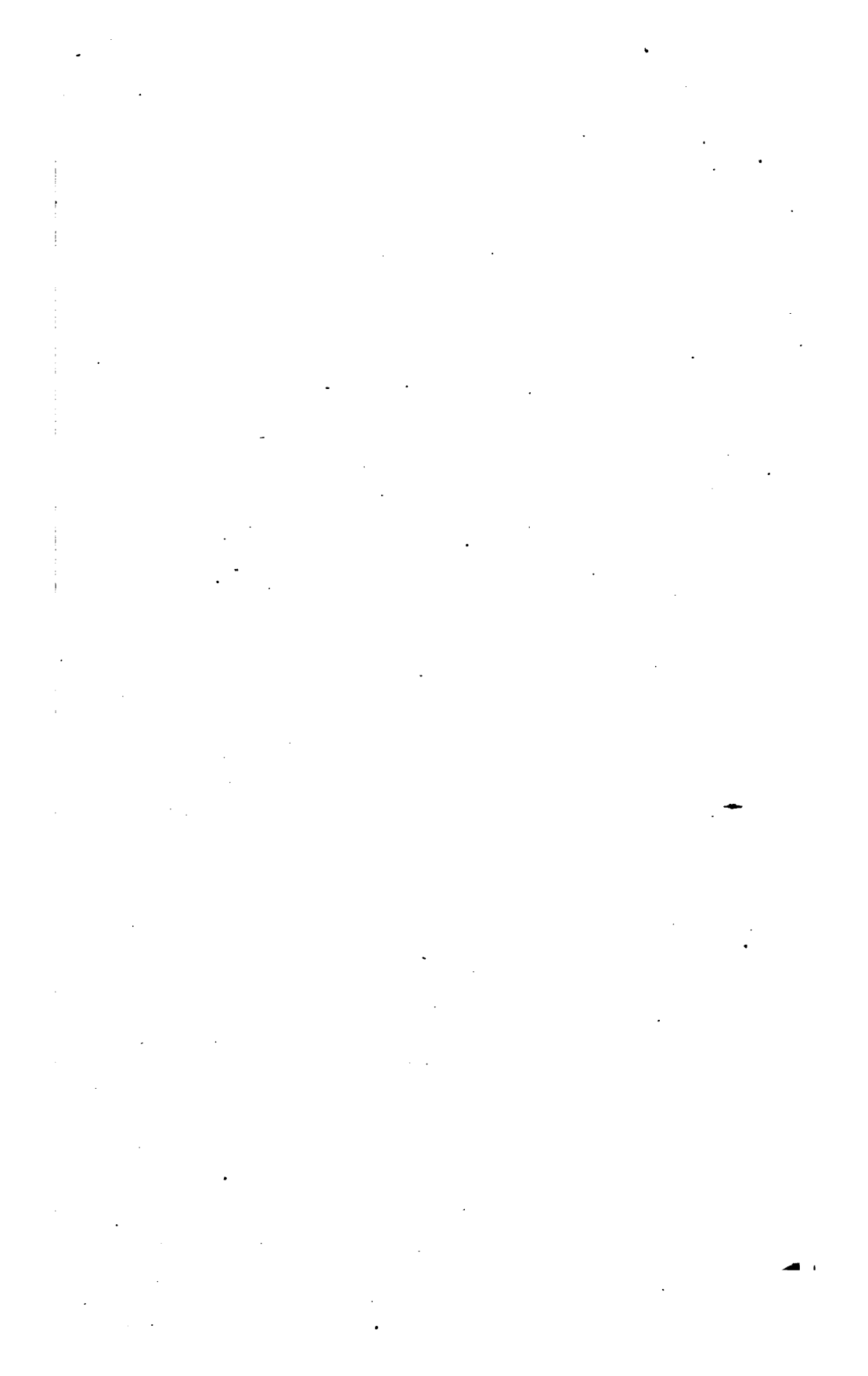
Sept. 30. By Balance.... \$ 457,463.59

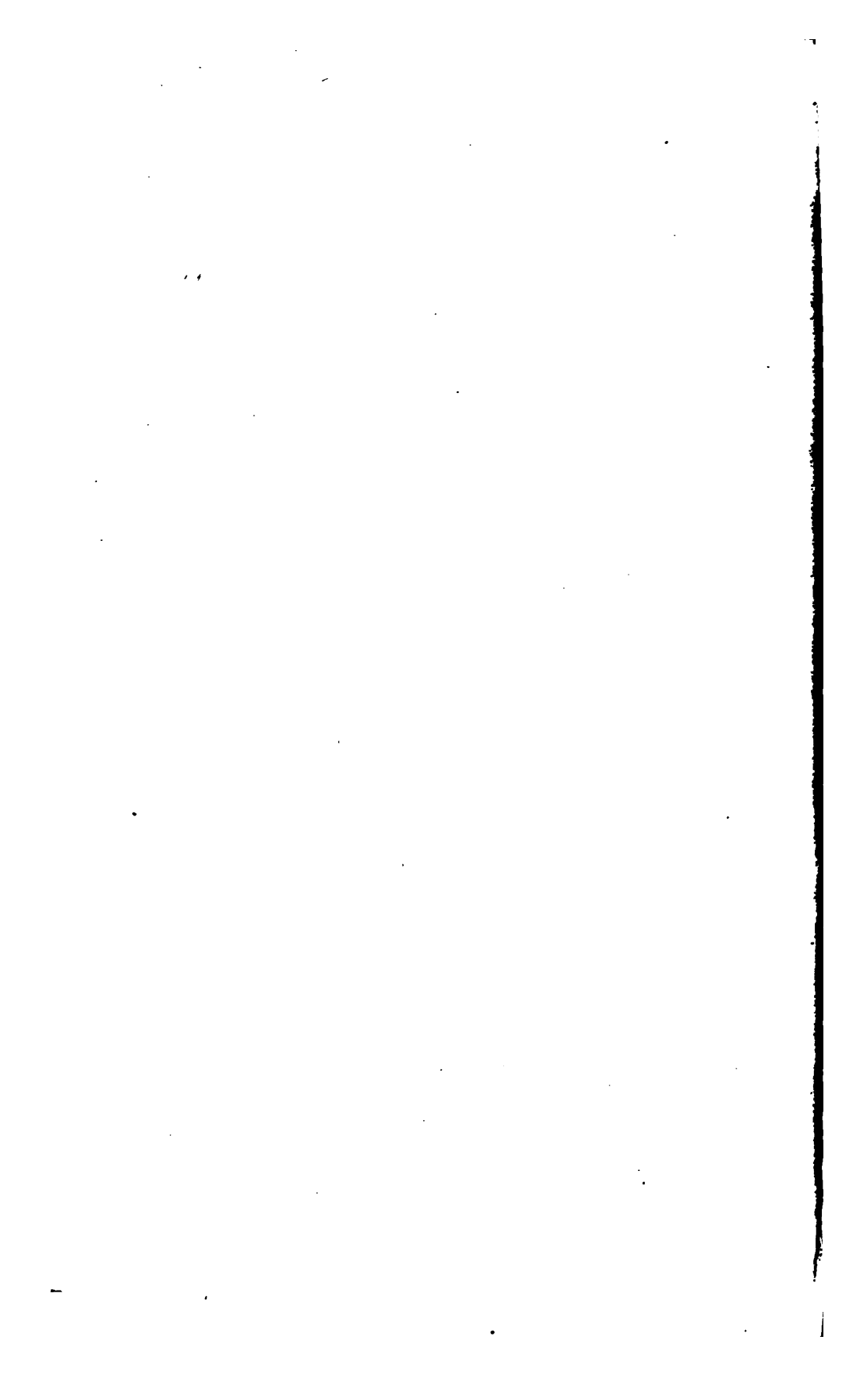
“ “ “ Net Earnings for the year, ending September
 30, 1877, as per statement..... 247,953.77

 \$705,417.36

1877.

Oct. 1. “ Balance as per Ledger Account.....\$ 393,763.29





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REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1878.

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 20, 1878.

BOSTON:

1878.

JAMES P. COTTER & CO., PRINTERS,
14 STATE STREET.



REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1878.

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 20, 1878.

BOSTON:

1878.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Boston and Providence Railroad Corporation.

THE Annual Meeting of this Corporation will be held at the Office of the Superintendent, at the Passenger Station, in Boston, on Wednesday, November 20, 1878, at eleven o'clock, A. M., for the choice of Directors, and the transaction of such other business as may be brought before the meeting.

WINSLOW WARREN,

Clerk of Boston and Providence Railroad Corporation.

Boston, November 12, 1878.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 20TH, 1878.

To the Stockholders:

THE Directors respectfully submit the forty-third Annual Report, giving the business of the road for the year ending September 30th, 1878.

The falling off in receipts noticed for the past five years, has been larger in comparison than ever before; meanwhile the decrease in expenses has equalled the expectations of your directors, and has more than kept pace with the diminished gross returns, showing in part, that the road is reaping the benefit of the permanent improvements of the last ten years.

The gross receipts for the fiscal year,

1876-7, were, ...	\$1,373,361.60
Those for the current year, 1877-8, . .	1,206,417.21

Showing a falling off in receipts of, . .	<u>\$166,944.39</u>
---	---------------------

In the corresponding period, 1876-7,
the expenses were, ... \$1,125,407.83
For the current year, 1877-8, ... 913,058.33

Showing a reduction in expenses of . . . \$212,349.50

It therefore appears, that the receipts
for this year have been less than
the last, ... \$166,944.39
And the expenses less, by 212,349.50

Showing an increase of net earnings, . . . \$45,405.11

The total net earnings of the year,
after the payment of interest and
taxes were, ... \$293,358.88

From which two dividends of three per
cent., \$120,000 each, have been paid
and credited, ... 240,000.00

To credit of profit and loss, ... \$53,358.88

The taxes, including \$5,000 paid to the United States Internal Revenue Department, in settlement of a disputed claim of long standing, amounted to \$1.70 per share. Without including the unusual item of internal revenue payment, the State and local tax on each share was \$1.58.

Since the thirtieth day of March, 1877, the Corporation has adopted the system of book-keeping recommended by the Railroad Commissioners, and the

above statement is supplemented by the following summary, in conformity with their method. The full details of the business of the year are set forth in the tables furnished by the Treasurer, and appended to this Report.

Gross receipts for the current year, . . .	\$1,206,417.21
Expenses, exclusive of taxes, \$	779,879.03
State and local taxes, . . .	63,048.50
United States tax, . . .	5,000.00
	847,927.53
Net earnings, ...	
	\$358,489.68
Interest paid to September 30, . . .	65,130.80
Earnings applicable to dividends, . . .	\$293,358.88
Dividends paid and declared, . . .	240,000.00
To credit of profit and loss, ...	\$53,358.88

With the uncertainties of the future, and the continued and increasing rivalry of other lines, it has been considered judicious and prudent not to divide the entire revenue of the year, but to devote the surplus over six per cent. on the capital stock, to the reduction of your debt. The interest paying debt is now one million of dollars, divided equally between bonds due in 1893, and notes payable, and has been brought within the limit, originally contemplated by the vote of the stockholders at a special meeting held March 4, 1873.

The road has no floating debt, as was stated last year. The notes payable, being held in large sums and having definite terms to run, are as much a funded debt as the so-called bonds, with the exception that some of the latter have interest coupons attached and are payable at a later date.

After due notice, your permission was formally asked and granted, at the last annual meeting, to renew a part or the whole of these notes, whenever occasion should require. As you are well aware, there is no mortgage on any part of your property.

The report of the directors to the Railroad Commissioners shows the number of miles run by the trains during the year to be 800,010, against 803,067 the previous year. The whole number of passengers carried this year is 3,213,189, against 3,197,600 for the former period. The whole number carried one mile 37,557,491, against 35,995,043, and the number of tons of freight 569,751, against 631,850 last year.

In the reduction of receipts, the amount of \$91,904.53 is due to the diminution of freight business, and \$75,850.39 to the falling off in returns from passenger traffic.

During the year a bridge of sixty feet span over Ten Mile River, in Attleborough, has been replaced by a brick arch, and a new iron bridge over the Neponset River, on the Canton meadows, has been pushed towards completion. These renewals were required

by the giving way of masonry which was deemed equal to the traffic of eleven years ago.

An iron parapet has been placed on the Canton Viaduct.

There are now in the main road, eighty and one-half miles, and in the various branches, five miles of steel rails. Six miles have been relaid with steel during the year, and the road bed has been kept in most thorough repair.

We have paid for and charged expenses, our proportion of two postal cars built by the New York and New Haven Railroad Company. One new passenger car and one new locomotive, to take the place of a car and locomotive broken up, have also been charged to expense account.

The road has not been without its casualties, but they have been comparatively few, and in no instance has the Corporation been to blame. Two passengers have met with disaster. One by falling from the rear platform of a train, was not seriously hurt. The other was killed, by jumping from the steamboat train while passing Roxbury Station at full speed. A suit relating to an injury which occurred some time ago, for which the amount claimed was large, after a laborious trial of three days in the Supreme Court, resulted in a verdict for the Corporation.

The sum of five thousand dollars, paid on account of internal revenue tax, was in settlement of a long and vexatious claim and suit, relating to the income of the road previous to the year 1871.

A dividend has been received on your investment in the Union Freight Railway of \$5,740, which was credited to interest account.

It is hoped that a year hence, the Providence, Warren and Bristol Railroad, with the increased efficiency of its rolling stock, its road bed and bridges in safe condition, and with its diminished debt, will be in a position to begin to make some return to your cash receipts.

Last year a considerable amount of the "Improvement Account" was charged off, and the current year, at the suggestion of the Railroad Commissioners, the remaining balance was charged directly to profit and loss.

This was in the nature of a construction account, and should never again appear on your books. While purely a matter of book-keeping, and making no difference in assets, your balance sheet shows your affairs in a more simple and accurate form, especially, as many of the various debits and credits represented highly inflated values in currency.

No negotiations are in progress between this and any other company for the joint use and occupation of your passenger station, as has been currently reported. This rumor was doubtless due to the fact, that last spring, your President stated to the government of the Boston and Albany Road, that whenever they had any thought of making a change in their passenger terminus in Boston, (of which change it is appre-

hended there is no present intention,) the Boston and Providence station offered ample accommodations for the offices of both Corporations, and for the convenience of travellers over each road. It was also stated that a careful survey by the engineers of the two roads, would readily show at a proper time, whether there was space enough in the train house and on the territory between it and the point of junction at Dartmouth Street, for the safe and convenient movement of trains. The suggestion was courteously received.

The returns of each month's business compared with the month of the previous year, as kept at the Treasurer's office, are open to every stockholder. These comparative returns are liable to great fluctuations. As, mentioning one disturbing element, in our uncertain climate, the snow account of one month may run up to some thousands of dollars, while the following winter there may be scarcely any charge to this troublesome source of expense; and so an open spring may throw the repairs of track into very different months from those of the previous year. There are other elements of difference in any comparative returns.

Your directors wish to say, that while they are fully in accord with the methods adopted by the Railroad Commissioners of the State, in obtaining approximate statistics, no stockholder should base a judgment on any returns of less than three or four months.

It has been pleasant to notice during the past twelve-month an increasing tendency on the part of stockholders to make inquiries in regard to the course of business at the offices of the Corporation, instead of relying on second-hand information, seldom trustworthy.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH. W. BALCH,		
ROYAL C. TAFT.		

BOSTON AND PROVIDENCE RAILROAD CORPORATION.

TREASURER'S OFFICE, OCTOBER 21, 1878.

To the President and Directors :

GENTLEMEN :—I submit herewith the following tables from the Treasurer's Books, for the year ending September 30, 1878.

Respectfully,

B. B. TORREY,

Treasurer.

DR.

Business for the year

COAL.....	\$ 79,164.62
PASSENGER DEPARTMENT.....	183,541.64
FREIGHT DEPARTMENT.....	136,353.18
REPAIRS OF RAILROAD.....	73,712.62
" " LOCOMOTIVES.....	45,113.24
" " PASSENGER CARS.....	27,543.99
" " FREIGHT CARS.....	26,302.39
" " STATIONS AND FIXTURES.....	18,530.55
" " BRIDGES.....	41,985.66
" " FENCES.....	5,852.71
SWITCH AND GATEMEN.....	41,868.93
MISCELLANEOUS EXPENSES.....	29,828.53
SLEEPER ACCOUNT.....	11,180.46
LOCAL AND STATE TAXES.....	68,048.50
GRATUITIES AND DAMAGES.....	3,728.05
OIL AND WASTE.....	7,493.50
RAIL ACCOUNT.....	28,954.97
INSURANCE AND FIRE DAMAGES.....	4,462.11
TELEGRAPH EXPENSES.....	1,279.23
SNOW ACCOUNT.....	2,026.41
ATTLEBOROUGH BRANCH RENT.....	10,956.24
INTEREST ACCOUNT.....	65,130.80
	\$913,058.33
BALANCE, carried to Profit and Loss Account.....	293,358.88
	\$1,206,417.21

ending September 30, 1878.

CR.

[illegible]

DR.

Profit and

1878.

Sept. 30.	To Dividend, three dollars per share, on 40,000 shares paid May 15, 1878.....	\$120,000.00
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“	“	“	Dividend, three dollars per share, on 40,000 shares payable November 1, 1878.....	120,000.00
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"	"	"	Improvement Account, Balance charged off....	83,994.78
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"	"	"	Balance to new Account.....	363,127.39
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\$687,122.17

Construction and Equipment.....	\$4,612,774.38
Stoughton Branch.....	85,400.00
Providence, Warren and Bristol Railroad Stock.....	267,555.00
Union Freight Railroad Company } Stock.....	79,014.42
Real Estate.....	214,295.51
Cash and Cash Funds.....	68,916.03
Notes Receivable.....	21,775.00
Materials on hand.....	137,032.71
Balances due from other Roads, etc....	53,707.07
	\$5,540,470.12

B. B. TORREY, Treasurer.





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REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1879,

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 19, 1879.

BOSTON:

1879.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1879,

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 19, 1879.

BOSTON:

1879.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Boston and Providence Railroad Corporation.

THE Annual Meeting of this Corporation will be held at the Passenger Station, in Boston, on Wednesday, November 19, 1879, at eleven o'clock, A. M., for the choice of Directors, and the transaction of such other business as may be brought before the meeting.

WINSLOW WARREN,

Clerk of Boston and Providence Railroad Corporation.

BOSTON, November 12, 1879.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 19TH, 1879.

To the Stockholders :

THE Directors respectfully submit the following Report of the business of your road for the year ending September 30, 1879.

The decrease in gross receipts, since 1873, to which your attention has been repeatedly called, continued up to the first of April last, and had amounted at that date to about \$40,000, as compared with the corresponding six months of the previous year. Since then your road has felt the effects of the growing prosperity of the country, so that the loss of the first six months has been in part overcome. The total falling off in gross receipts this year from the last being \$28,178.92, as follows :—

The gross receipts for the fiscal year,

1877-8, were, ... \$1,206,417.21

Those for the current year, 1878-9, . . . 1,178,238.29

Decrease, ... \$28,178.92

In the corresponding period, 1877-8,	
the expenses were, ...	\$913,058.33
For the current year, 1878-9, . . .	846,862.16
Showing a reduction in expenses of . .	\$66,196.17

It appears therefore that the receipts	
for this year have been less than	
the last, ...	\$28,178.92
And the expenses less by, ...	66,196.17
Showing an increase of net earnings, .	\$38,017.25

The full details of the business of the year may be found in the tables furnished by the Treasurer, and appended to this report, the general result being as follows:—

Gross receipts for the current year, . .	\$1,178,238.29
Expenses, exclusive of taxes, \$733,460.44	
State and local taxes, ...	60,152.60
	793,613.04
Net earnings, ...	\$384,625.25
Balance of Interest Account to Sept. 30,	53,249.12
Earnings applicable to dividends, . .	\$331,376.13
Dividends paid and declared, 6½ per ct.,	260,000.00
To credit of profit and loss, ...	\$71,376.13

Two dividends have been declared, one in the spring, of three per cent., and one in the fall of three and one-half per cent., making six and one-half per cent. for the year, free of taxation.

The State and local taxes amounted to one dollar and fifty cents on each share.

The interest paying debt has been reduced since October 1st, 1878, from \$1,000,000 to \$920,000, all bearing seven per cent. interest, and maturing as follows:—

1880 Notes, January and July,	.\$200,000
1881 " 	120,000
1882 " 	100,000
	\$420,000
1893 Bonds, ...	.\$500,000
	<u>\$920,000</u>

It may be proper to state to any new stockholders certain facts in regard to the above forms of debt, well known to the older holders of your shares, and it can best be done in the language of the report of September 30th, 1877, when the interest paying debt was \$1,294,000:

“In 1873, the Directors were authorized to issue one million of seven per cent. bonds, having twenty years to run, which with outstanding notes would have been more than ample to close up all indebtedness. Only one-half of these long bonds were issued, and the remainder of the debt was thrown into

notes covering a series of years. This plan was adopted on the theory that as the notes fell due, they could probably be renewed at lower rates of interest, and that at times they might be temporarily, if not permanently reduced in amount. There has been no floating indebtedness, these notes being held for the most part by savings banks or moneyed institutions in large amounts.”—(Pages 5 and 6, Report 1877.)

The returns to the Railroad Commissioners show :

The number of miles run by the trains during the year to have been, ...	811,856
Number of miles run the previous year, ...	800,010

More mileage, 1878-9, ...	11,846
---------------------------------	--------

Whole number of passengers carried this year, ...	3,206,488
Whole number carried last year, ...	3,213,189

Less number of passengers, 1878-9, ...	6,701
--	-------

Whole number of passengers carried one mile, ...	37,959,303
Carried one mile the previous year, ...	37,557,491

Greater number carried one mile, 1878-9, ...	401,812
--	---------

Tons of freight moved this year, ...	593,346
Tons of freight moved last year, ...	569,751

Increase of tonnage, 1878-9, ...	23,595
--	--------

A dividend of \$5,740, received on your investment in the Union Freight Railway, was credited to interest account.

One year's back dividend on the preferred stock of the Providence, Warren and Bristol Railroad, amounting to \$8,580, was credited to the reduction of the valuation of the Common stock.*

This road of thirteen and six-tenths miles will hereafter doubtless continue to contribute somewhat to your revenue. When its control was assumed by the Boston and Providence Railroad Corporation, in 1873, it was encumbered with a mortgage debt of Fifty thousand dollars, bearing eight per cent. interest payable each six months in advance. The mortgage has been lifted from the property, and the debt reduced to Twenty thousand dollars. This debt bearing six per cent. interest, is due the Boston and Providence Corporation, and appears among your notes receivable. It is available at any moment. Meanwhile, three miles of steel rails have been placed

*The capital stock of the Providence, Warren and Bristol Railroad is held as follows:—

Common Shares held by Boston and Providence R.R. Co.....	1,812	
Common Shares held by others.....	1,061	
		2,873
Preferred Shares held by Boston and Providence R.R. Co.....	1,430	
Preferred Shares held by others.....	70	
		1,500
Total number of shares.....		4,373

in the track, the road bed greatly improved, the rolling stock made efficient, and an iron bridge, built by the Edgemoor Company, of Delaware, over the Barrington River, to replace a defective wooden structure.

The Stoughton Branch, standing at eighty-five thousand four hundred dollars in the balance sheet, is really an integral part of your road and is operated as such. As it represents forty-five thousand four hundred dollars of your present debt, it is still stated as a separate investment.

Before the Stoughton Branch Road was fully acquired by your Corporation, and there were two distinct managements, the station in Canton on the main line was known as Canton, that on the branch as South Canton. The latter represents the business centre of the town, and owing to an influential petition, and with due regard to some remonstrances, the name of Canton has been transferred to it, the station on the main road being now known as "Canton Junction," conveying to strangers and travellers a more definite meaning.

The last wooden bridge of any consequence in the main road, over Ten-mile River, at Dodgeville, is being replaced by two arches of masonry. The work is of such a nature, that if hereafter, from any cause, the dam of the mill-pond just above the track should give way, it is believed that the strength of the abutments and the size of the arches, both of thirty feet span, will be ample to resist and

carry off any rush of water.* This work, equally a provision of safety against fire and water, has progressed slowly, and will not be completed before another summer. Over one-half of the estimated cost of eighteen thousand dollars, namely, ten thousand dollars, has gone into the current expenses of the year.

One new locomotive has been built for the Company by the Rhode Island Locomotive Works, and sixteen dump cars purchased. Ten miles of ties have been renewed, three miles of steel rails laid in the main track, and in the branches one and one-half miles. All the above items have been charged to expense account. The road bed was never in so good condition, nor the rolling stock in better repair.

There are in the main road, eighty-two and one-half miles, and in the several branches six and one-half miles of steel rails. The main road is now equipped with steel rails, with the exception of five and one-half miles.

*This stream is chiefly controlled by Messrs B. B. and R. Knight, whose cotton fabrics are so celebrated. The acknowledgments of the Stockholders are due to these gentlemen for the cordial manner in which they have coöperated with your company in the past and present, in furthering every measure of safety and thoroughness of work appertaining to this water course. At Hebronville they have supplemented the heavy masonry of the Corporation by similar work, and at Dodgeville they have granted large liberties, permitting your company to change the course of the river.

In last year's Report it was stated, that the government of the Boston and Albany Road had been notified, "that whenever they had any thought of making a change in their passenger terminus in Boston, the Boston and Providence station offered ample accommodations for the offices of both Corporations and for the convenience of travellers over each road."

This led to several conferences during the last spring between the representatives of the two boards of Directors, and to some correspondence.

Meanwhile, a careful account of stock and property was made. The result showed, that owing to the outlays of former years, represented in a large measure by your debt, and by the enhanced value of the real estate occupied and enjoyed by the Boston and Providence Corporation, the value of the property was far in excess of any present market value of the stock, even after making liberal deductions from assessed values.

Aware that any propositions could only be consummated by the votes of the Stockholders, and by legislative action, the subjects of the joint occupancy of your passenger station and of a perpetual lease of the entire property of your Corporation were considered, but with no satisfactory result to the gentlemen representing either Company.

Later, in answer to a verbal inquiry, "what the Directors of the Boston and Providence Corporation

would consider fair terms for the transfer of its entire franchise to the Boston and Albany Company," at a meeting of the board held on the 1st of July last, every member being present, your President was instructed by a unanimous vote, to say: "that the present Directors prefer to lease one-half of all the premises of the Corporation to Dartmouth street, including the freight station, your Company [the B. and A.] to accommodate the Boston and Providence freight at Albany street.

"The terms of such lease they are willing to leave to three referees, you presenting a list from which we shall select one, this Corporation to present a list of names from which you shall select another, and if unable to agree upon the third, the two referees to make their own selection.

"On the other hand, if this proposition be not acceptable, in view of the facts, that while the Boston and Providence Corporation has been keeping its road in most thorough condition, substituting iron for wood, (being engaged at the present moment in replacing with masonry the last wooden structure in its main track,) and has with reduced dividends been constantly and materially reducing its debt, the Directors are not willing to name a price of sale.

"A proposition to exchange share for share, and so consolidate the two properties, would be submitted to the Stockholders at the next annual or any special meeting."

President Lincoln replied, under date of July 17th, in a courteous letter of three pages, that after a "very careful consideration by the managers of this [the B. and A.] Road," neither of these propositions could be entertained.

Since this date there has been no official correspondence.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		
ROYAL C. TAFT,		

BOSTON AND PROVIDENCE RAILROAD CORPORATION.

TREASURER'S OFFICE, OCTOBER 20, 1879.

To the President and Directors:

GENTLEMEN:—I submit herewith the following tables from the Treasurer's Books, for the year ending September 30, 1879.

Respectfully,

B. B. TORREY,
Treasurer.

DR.

Business for the year

COAL.....	\$ 74,762.99
PASSENGER DEPARTMENT.....	184,307.76
FREIGHT DEPARTMENT	129,112.85
REPAIRS OF RAILROAD.....	70,039.70
" " LOCOMOTIVES.....	45,297.73
" " PASSENGER CARS.....	23,490.41
" " FREIGHT CARS.....	21,714.81
" " STATIONS AND FIXTURES.....	21,167.25
" " BRIDGES.....	24,738.39
" " FENCES.....	4,411.16
SWITCH AND GATEMEN.....	42,235.38
MISCELLANEOUS EXPENSES.....	29,263.87
SLEEPER ACCOUNT.....	11,001.84
LOCAL AND STATE TAXES.....	60,152.60
GRATUITIES AND DAMAGES.....	4,665.19
OIL AND WASTE.....	6,266.04
RAIL ACCOUNT.....	25,709.51
INSURANCE AND FIRE DAMAGES.....	229.00
TELEGRAPH EXPENSES.....	1,303.26
SNOW ACCOUNT.....	2,826.03
ATTLEBOROUGH BRANCH RENT.....	10,917.27
INTEREST ACCOUNT.....	53,249.12
	\$846,862.16
BALANCE, carried to Profit and Loss Account.....	331,376.13
	\$1,178,238.29

DR.

Profit and

1879.

Sept. 30. To Dividend, three dollars per share, on 40,000
 shares paid May 1, 1879..... \$120,000.00

" " " Dividend, three and one-half dollars per share,
 on 40,000 shares payable November 1, 1879, 140,000.00

" " " Balance to new Account..... 434,503.52

\$694,503.52

Loss Account.

CR.

1879.

Sept. 30.	By Balance.....	\$363,127.39
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"	"	"	Net Earnings for the year ending September	
			30, 1879, as per statement.....	331,376.13

\$694,503.52

1879.

Oct. 1.	"	Balance as per Ledger Account.....	\$434,503.52
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DR.

Trial Balance, September 30, 1879.

CR.

Construction and Equipment.....	\$4,612,774.38
Stoughton Branch.....	85,400.00
Providence, Warren and Bristol } Railroad Stock.....	258,985.00
Union Freight Railroad Company } Stock.....	79,014.42
Real Estate.....	213,816.13
Cash and Cash Funds.....	138,773.76
Notes Receivable.....	21,775.00
Materials on hand.....	97,589.58
Balances due from other Roads, etc..	53,629.60
	\$5,561,757.87

Capital Stock.....	\$4,000,000.00
Seven per cent. Bonds, due 1893.....	500,000.00
Notes Payable	420,000.00
Unpaid Dividends.....	4,982.00
Dividend No. 86, due Nov. 1, 1879 ..	140,000.00
Balances due other Roads, etc.....	62,272.35
Profit and Loss.....	434,503.52

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B. B. TORREY, *Treasurer.*

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REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1883,

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 21, 1883.

BOSTON:

1883.

JAMES F. COTTER & CO., PRINTERS,
165 DEVONSHIRE STREET.

Boston and Providence Railroad Corporation.

The Annual Meeting of this Corporation will be held at the Passenger Station in Boston, on Wednesday, November 21, 1883, at eleven and a half o'clock, A. M., for the choice of Directors, and the transaction of such other business as may be brought before the meeting.

WINSLOW WARREN,

Clerk of Boston and Providence Railroad Corporation.

BOSTON, NOVEMBER 9th, 1883.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 21ST, 1883.

To the Stockholders :

The Directors respectfully submit the Forty-eighth Annual Report of the business of the Road for the year ending September 30, 1883.

The gross receipts for the last ten years have been :

1874	.\$1,687,279
1875	1,581,258
1876	1,467,759
1877	1,373,361
1878	1,206,417
1879	1,178,238
1880	1,323,925
1881	1,419,312
1882	1,584,839
1883	1,669,134

NOTE—The road was opened for business to Readville June 4, 1834, and to Providence in August, 1835.

There is no floating debt, and the funded debt

Is due July 1, 1884, ...	\$60,000
“ Jan. 1, 1886, ...	50,000
“ July 1, 1886, ...	50,000
“ July 1, 1888, ...	100,000
“ July 1, 1889, ...	100,000
“ July 1, 1893, ...	500,000
	\$860,000

The gross receipts for the fiscal year,

1881-'82, were, ...	\$1,584,839.44
Those for the current year, 1882-'83, ...	1,669,134.32
Increase, ...	\$84,294.88

In the corresponding period, 1881-'82,

the expenses were, ...	\$1,255,324.87
For the current year, 1882-'83, ...	1,339,243.60

Showing an increase in expenses of \$83,918.73

It appears therefore that the receipts

for this year have been more than	
the last, ...	\$84,294.88
And the expenses more by	83,918.73

Showing an increase of net earnings, ... \$376.15

The full details of the business may be found in the tables furnished by the Treasurer, and appended to this report, the general result being as follows:—

Gross receipts for the current year, . . .	\$1,669,134.32
Expenses, exclusive of taxes and interest, ...	\$1,231,880.70
State and local taxes, . . .	91,673.93
	1,323,554.63

Net earnings, ...	\$345,579.69
Balance of Interest Account to Sept. 30,	15,688.97

Earnings applicable to Dividends, . . .	\$329,890.72
Dividends paid and declared, 8 per ct.,	320,000.00

To credit of profit and loss, ...	\$9,890.72
---------------------------------------	------------

The returns to the Railroad Commissioners show :

The number of miles run by the trains during the year to have been, ...	956,506
Number of miles run the previous year,	888,707

More mileage, 1882-'83, ...	67,799
-----------------------------------	--------

Whole number of passengers carried this year, ...	4,923,426
Whole number carried last year, . . .	4,128,299

Greater number of passengers, 1882-'83,	795,127
---	---------

Whole number of passengers carried one mile, ...	51,399,499
Carried one mile the previous year, . .	46,344,791
Greater number carried one mile 1882-'83,	5,054,708
Tons of freight moved this year, . . .	735,650
Tons of freight moved last year, . . .	718,500
Increase of Tonnage 1882-'83, ...	17,150

Two dividends of four per cent. each, clear of taxes, have been earned and declared.

The dividends on investments in the Union Freight Railway and the preferred stock of the Providence, Warren and Bristol Railroad have been credited to Interest Account. The balance charged to this account is much less than it is likely to be hereafter, several deferred dividends on the Providence, Warren and Bristol preferred shares, amounting to \$17,172 having been received. The calls on this short line, for improvements, indicate that similar dividends cannot be expected in the future.

Twenty freight and fifteen passenger cars, four locomotives, with a small proportion of eight Wagner, six passenger and two baggage cars for the New York Line, have been acquired and charged to expense account. The cost of an iron draw-bridge at India Point, \$18,000, and about

\$12,500 on account of the third track and an iron highway bridge at Hyde Park, have also been charged to expense.

As it would be impossible to carry to current expenses the entire amount spent this year on the third track, \$37,500 of the cost has been charged to profit and loss.

The "Stoughton Branch" has long been an integral part of the road. This item heretofore appearing separately on the trial balance at \$85,400, has been included in the statement of Construction and Equipment.

It was stated in last year's report, that on the 18th of September, 1882, a hearing was given to petitioners for lower fares between Boston and the suburban stations. On the first of January, a marked reduction was made on short travel from Boston and from Providence, and a modification of rates was made over the entire line. This measure, entered into after thoughtful deliberation, has undoubtedly led to large increase of travel.

It was to be expected, that the expenses incident to so radical a change would be very great, owing to the rolling stock required and additional service of every kind. That the increased expenses have been offset by the receipts, in the first year of experiment, is a most welcome result.

As is well known the accommodations of this and other railways centring in Providence, are not equal to the efficient and economical transaction

of passenger or freight traffic. The Commissioners appointed by the Government of that City, have had frequent interviews with the representatives of the different corporations, on this subject. As keeping before the Stockholders, the fact that large outlays must necessarily be made within a few years, and to preserve in a permanent form the history of the approaches towards a settlement of this difficult problem, a communication addressed to the President, bearing date, August 8th, 1883, has been printed and will be found in the Appendix.

The Commissioners have been told that the Directors of this road are willing to recommend to the Stockholders, the loans and appropriations necessary for carrying out any plan which the other roads in interest can reasonably be expected to adopt.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		
ROYAL C. TAFT,		

INCOME.

Passengers.....	\$968,847.39
Freight.....	626,636.15
Rents.....	22,172.12
Express.....	38,168.02
Mails.....	13,310.64
	\$1,669,134.32

EXPENSES.

Salaries of General Officers and Clerks.....	\$32,087.55
Legal Expenses.....	5,933.80
Insurance.....	199.47
Stationery and Printing.....	10,217.96
Outside Agencies and Advertising.....	10,816.51
Contingencies and Miscellaneous.....	998.59
Repairs of Bridges.....	40,905.85
Repairs of Buildings.....	97,700.24
Repairs of Fences, Road Crossings and Signs.....	5,128.31
Renewal of Rails.....	35,331.46
Renewal of Ties.....	33,556.94
Repairs of Road-bed and Track.....	132,907.93
Repairs of Locomotives.....	84,568.44
Fuel for Locomotives.....	120,789.89
Water Supply.....	9,651.60
Oil and Waste.....	15,929.43
Locomotive Service.....	87,326.69
Repairs of Passenger Cars.....	126,774.60
Passenger Train Service.....	59,691.00
Passenger Train Supplies.....	4,365.56
Repairs of Freight Cars.....	33,212.30
Freight Train Service.....	24,875.79
Freight Train Supplies.....	971.69
Mileage Freight Cars.....	4,983.46
Telegraph Expenses.....	1,799.21
Gratuities and Damages.....	10,265.19
Agents and Station Service.....	206,882.91
Station Supplies.....	22,276.26
Taxes.....	91,673.93
Attleboro Branch Rent.....	11,732.07
Interest Account.....	15,688.97
Total Expenses.....	\$1,339,243.60
Balance carried to Profit and Loss.....	329,890.72
	\$1,669,134.32

Dr.	<i>Profit and Loss Account.</i>	Cr.
1883.		
Sept. 30.	To Dividend, four dollars per share, on forty thousand shares, paid May 1.....\$160,000.00	By Balance September 30, 1882.....\$440,066.19
	To Dividend, four dollars per share, on forty thousand shares, payable Nov. 1.... 160,000.00	By Net Earnings for the year ending September 30, 1883..... 329,890.72
	Third Track..... 37,500.00	
	Balance to New Account... 412,456.91	
		<u>\$769,956.91</u>

DR.		CR.
	<i>Trial Balance, September 30, 1883.</i>	

Construction and Equipment.....	\$4,896,174.38
Providence, Warren and Bristol } Railroad Stock.....	152,370.00
Union Freight Railroad Company } Stock.....	79,014.42
Cash and Cash Funds.....	38,662.56
Notes Receivable.....	20,325.00
Materials on hand.....	136,764.90
Balances due from other Roads, etc..	167,175.39
	\$5,490,486.65

B. B. TORREY, Treasurer.

APPENDIX.

CITY OF PROVIDENCE.

COMMISSION

ON THE

IMPROVEMENT OF RAILROAD TERMINAL FACILITIES.

WILLIAM GODDARD,
ROBERT KNIGHT,
CHARLES WARREN LIPPITT, } Commissioners.
SAMUEL S. SPRAGUE,
HARVEY E. WELLMAN, }
GEORGE W. MILLARD, Secretary.

CITY HALL, August 8, 1883.

HENRY A. WHITNEY, Esq.,

PRESIDENT BOSTON AND PROVIDENCE R. R. Co.

DEAR SIR: —

• Immediately after the rejection by the several railroad corporations of the plans for improved terminal facilities submitted to the City Council, April 17th, 1882, the Commissioners directed their attention to such modifications of their plans as would reduce the cost of the proposed changes to a sum which the several railroad corporations would be willing to expend. In the preparation of the plans, which the Commissioners now submit to the President and Directors of the Boston and Providence Railroad Corporation, they have been assisted by your engineer, Mr. Minot, and by Mr. Ellis, the engineer of the Providence and Worcester Railroad

Company. These experienced engineers delineated upon the plat the alignment of tracks entering the passenger station from the easterly and westerly ends; and, as we have reason to know that Mr. Minot has exhibited to you this plan now proposed by the Commissioners, we beg to refer you to him for such explanations of its engineering features as you may desire.

There appeared to the Commissioners but two methods whereby the expense to the several contributing railroad companies of this great enlargement and improvement of both passenger and freight terminal facilities could be reduced, namely,—by adopting some plan less costly than the one first proposed by them, and, secondly, by imposing upon the City of Providence a larger proportion of the expense of executing it than was contemplated by their earlier scheme. The Commissioners have resorted to both of these methods. The actual cost of the work contemplated by their plans has been materially reduced, and the contribution of the City of Providence toward the expense of completing them will be very considerably increased. You will perceive, from an examination of their plans, that the Commissioners propose the erection, by the several railroad corporations now entering the cove, of a passenger station elevated above the level of the freight yards, and entered by means of a causeway commencing at Smith Street and rising on a grade of 24.66 feet per mile until it enters the station. The elevation of this structure, designed by Stone & Carpenter, architects, is approved by the Commissioners. The division of the administrative department in the head-house may require some modification of this plan to better adapt it to the public convenience and to the requirements of the railroad companies. The freight department of your railroad will cover all the land south of Smith Street, east of the elevated

track, west of the proposed channel of the Moshassuck River, and north of the projected extension of Steeple Street from Canal Street, under the elevated track, and thence across the cove. The Commissioners understand that, by agreement with the Providence and Worcester Railroad Company, the title of that corporation to the land and buildings within these boundaries will be acquired by you. A portion of the southerly end of the present freight house of the Providence and Worcester Railroad Company will be cut off by the extension of Steeple Street. For the land taken by the City from your corporation and from the Providence and Worcester Railroad Company, an equal area within the cove will be granted to you or to the Providence and Worcester Railroad Company, for railroad purposes; but no allowances will be made for cutting off the end of the freight-house, nor will any allowance be made by the city for the passenger station, now standing upon land which by this plan will become the property of the city. The railroad companies owning this building will be required to remove the same at their own expense.

The Commissioners have decided upon a uniform width of forty-five feet between the walls for the channel of the Moshassuck River from the southerly side of Smith Street until it enters into the Providence River. The Boston and Providence Railroad Company will be required to build, at their own cost, in accordance with plans to be approved by the city, the westerly wall of this channel, commencing at the southerly side of Smith Street and extending to the proposed extension of Steeple Street. The residue of the cost of extending the channel of the river through Canal Street will be assumed by the City of Providence.

The Boston and Providence and the Providence and Worcester Railroad Corporations will also be required to

build and maintain an overhead crossing at Charles Street, with approaches from Admiral Street and from the northerly part of Charles Street at a grade not exceeding three feet per hundred, and with an approach from the southerly side of Charles Street, commencing at the junction of West River and Charles Streets, the additional expense of an approach on the southerly side beyond that of three feet per hundred to be defrayed by the city. For a plan of this crossing the Commissioners respectfully refer you to the one which accompanied their first report. The expense attending the lengthening of the Smith Street Bridge, in order to admit of the laying of additional tracks, and also to gain access to the proposed freight tracks of the Providence and Worcester Railroad Company, will also be assumed by your corporation and by the Providence and Worcester Railroad Company; and the cost of building and maintaining that portion of the proposed extension of Steeple Street, which will be covered by the elevated tracks, will also devolve upon your corporation and upon the Providence and Worcester Railroad Company. As these corporations have heretofore acted with a harmony unusual even between railroad companies, the Commissioners take it for granted that the apportionment of these expenses, and all other details of this plan, will be amicably adjusted by the two corporations, without any intervention of theirs.

The resolutions of the City Council, approved by His Honor the Mayor, under which the Commissioners are now acting, do not authorize them to enter into contracts with the railroad corporations for the sale to them of lands owned by the city, and the Commissioners are able therefore only to state to you what they will recommend the City Council to do, in case the several railroad corporations shall first signify their willingness to accept the terms and conditions which the Commissioners now propose. Having received

evidence of this acceptance, the Commissioners will report to the City Council, recommending that the City of Providence sell, for railroad purposes, with restrictions similar to those which followed their former grants to the railroads, such areas of the Cove and Cove Promenade as are shown upon the plat of proposed improvements in railroad terminal facilities as appropriated to the Boston and Providence and Providence and Worcester Railroad Corporations, at the price of one dollar per square foot, with the stipulation that the city will build and maintain the walls on each side of the Woonasquatucket River, and that the railroad companies shall, at their own expense, fill all the land in the cove allotted to them, and also fill to the grade of the freight yards—not less, however, than six feet above mean high water—the area of the extension of Steeple Street, until it reaches the Cove Promenade near Promenade Street. The City of Providence will pave this street after it shall have been brought to grade, and will build sidewalks, and light and maintain the street as a public highway. And, inasmuch as that portion of the cove lying south of this projected channel, which will remain the property of the city, cannot conveniently be filled except through the agency of the railroads, the Commissioners will stipulate that this area of land shall also be filled by the railroads to a uniform grade of six feet above mean high water, the city agreeing to reimburse them for the actual cost of filling. The Commissioners will also advise the City Council, as a condition of the contract, to agree to widen Exchange Place in accordance with their plans, to establish a grade of two feet and a quarter per hundred from the south side of Exchange Place to the centre of the new passenger station, and to pave and maintain the same.

The Commissioners have not lost sight of the great importance attached by them and their fellow citizens to the

removal of the railroad tracks from Market Square and the upper end of South Water and Dyer Streets, and they respectfully call your attention to their recommendations with respect to these tracks contained in their first report to the City Council. While their views of the necessity of removing these dangerous tracks from the crowded thoroughfares of the city, and of substituting for them the connections indicated in their early report, remain unaltered, they are not disposed, in view of the great outlay by the railroad companies in the vicinity of the cove, to require them forthwith to make this change also, but they think it proper to state that the substitution for these tracks of the connections suggested by them in the report referred to at no very distant day will be recommended by them as a condition of the grants by the city. So far as freight which is now carried up and down South Water Street is concerned, the change can forthwith be made with no further expense than that of laying a second track on India Street, and by an arrangement between the Boston and Providence and Providence and Worcester Railroads, for a joint occupation of the same. The removal of the Dyer Street track involves the extension of the tracks of the Stonington Railroad through Allen's Avenue to the Crawford Street Bridge, and may be delayed for a while at the pleasure of the City Council.

The plans which Messrs. Minot and Ellis have prepared show an embankment on the northerly side of the elevated track. For this embankment the Commissioners must require the substitution of a retaining wall built upon a foundation of piles. While this wall will somewhat increase the cost of the work, it will reduce the quantity of land necessary to be taken and leave the area remaining in the possession of the city in much better condition, besides avoiding all further outlays for keeping the embankment in good order.

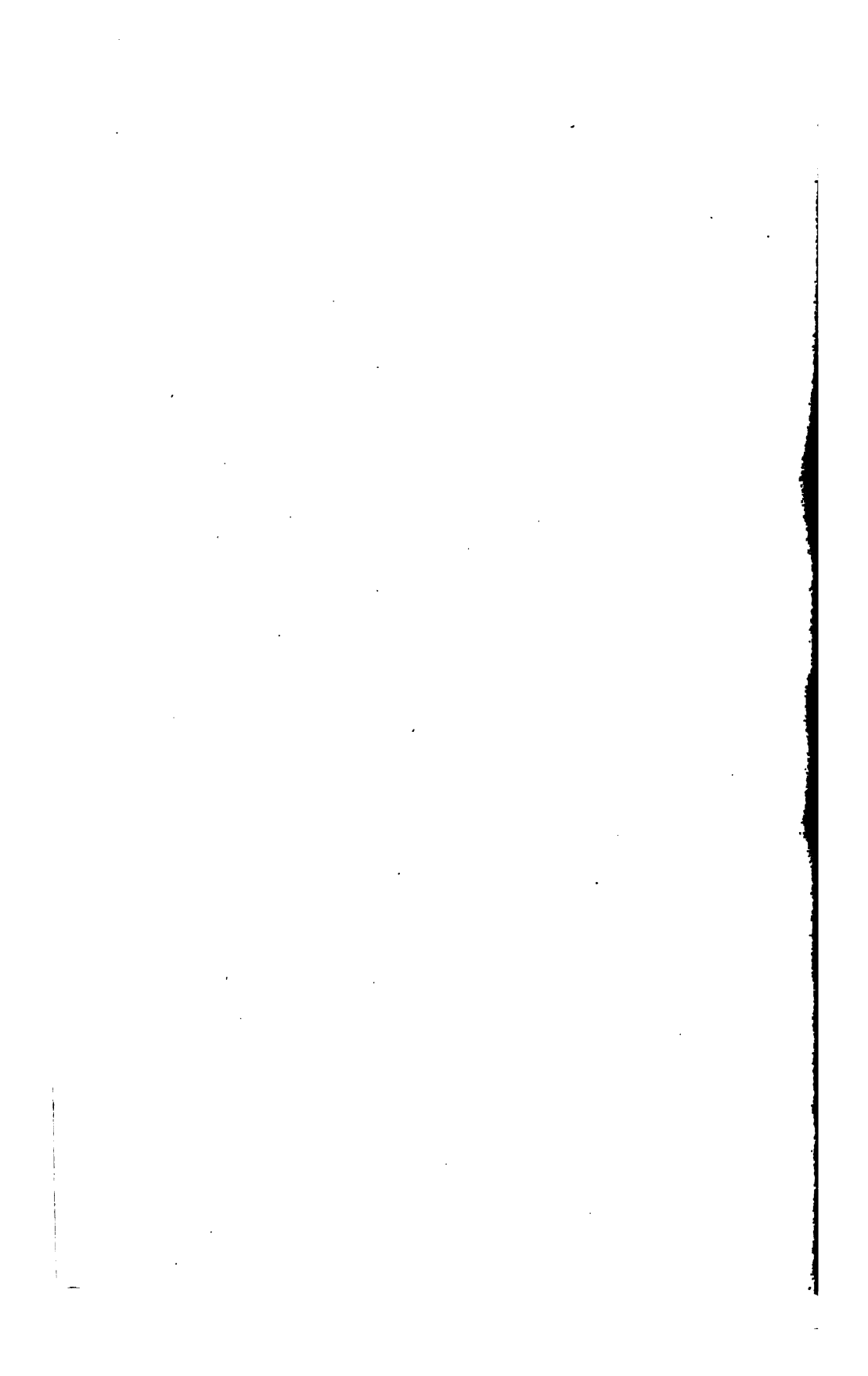
The Commissioners have attempted in this note to state to you the conditions which they are willing to advise the City Council to exact and to concede. They have not sought to express these conditions in the technical phrases of a legal covenant, but they think they will be sufficiently explicit to enable you to decide whether or not to accept them. With the hope that at an early day you may acquaint us with your decision, in order that we may be able to make our report to the City Council, we have the honor to be

Your obedient servants,

WILLIAM GODDARD,
ROBERT KNIGHT,
SAMUEL S. SPRAGUE,
HARVEY E. WELLMAN.

This note is signed by four of the five Commissioners; Mr. LIPPITT, while agreeing to all the engineering features of the plan, dissenting from other conclusions of the Commissioners.





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REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1881.

PRESENTED AT THE

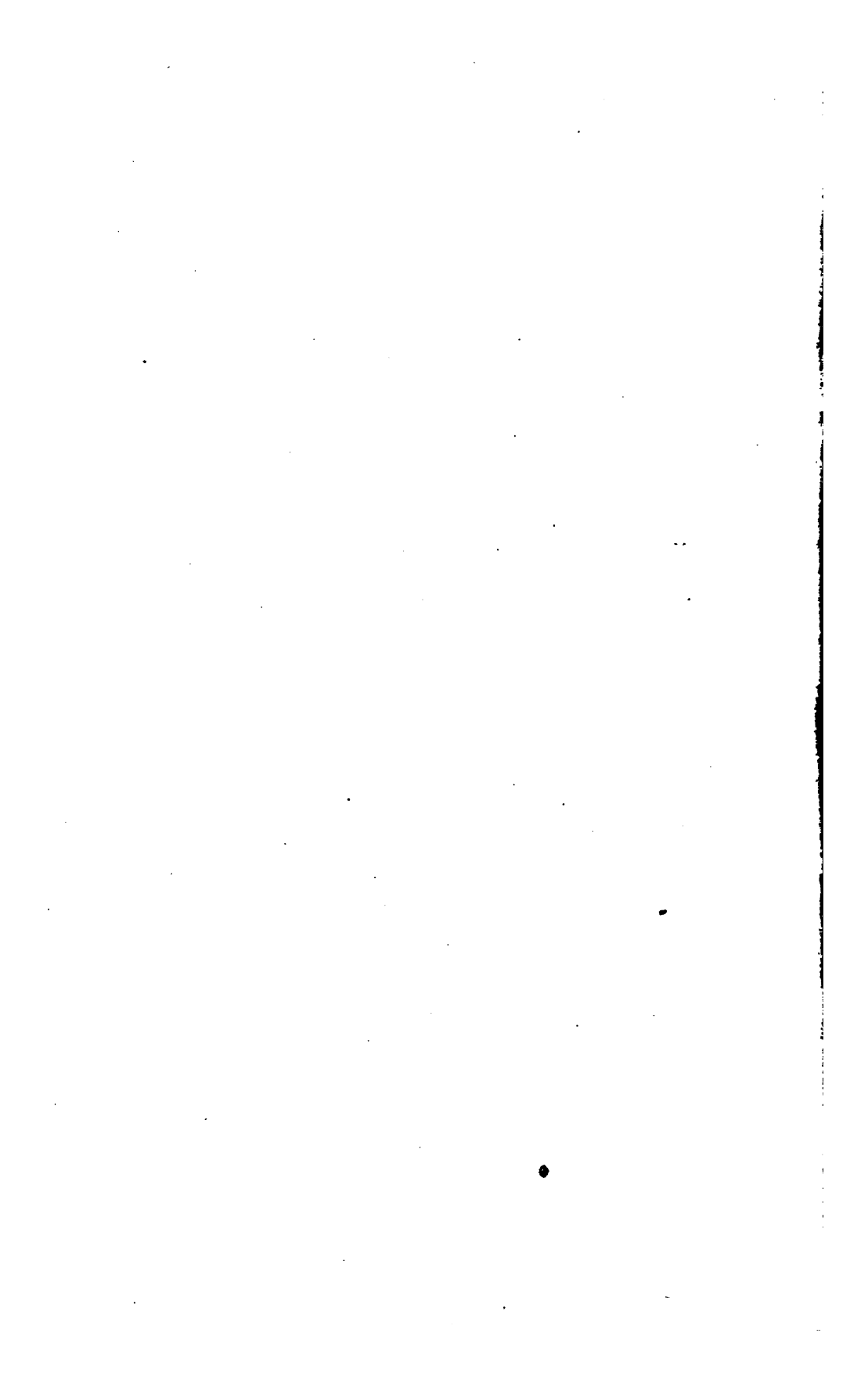
ANNUAL MEETING, NOVEMBER 16, 1881.

BOSTON:

1881.

JAMES F. COTTER & CO., PRINTERS.

14 STATE STREET.



REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Boston and Providence Railroad

CORPORATION,

FOR THE YEAR ENDING SEPTEMBER 30, 1881.

PRESENTED AT THE

ANNUAL MEETING, NOVEMBER 16, 1881.

BOSTON:

1881.

JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Boston and Providence Railroad Corporation.

The Annual Meeting of this Corporation will be held at the Passenger Station in Boston, on Wednesday, November 16, 1881, at eleven o'clock, A. M., for the choice of Directors, and the transaction of such other business as may be brought before the meeting.

WINSLOW WARREN,

Clerk of Boston and Providence Railroad Corporation.

BOSTON, November, 7th, 1881.

Boston and Providence Railroad Corporation.

ANNUAL MEETING,

WEDNESDAY, NOVEMBER 16TH, 1881.

To the Stockholders :

The Directors respectfully submit the Forty-sixth Annual Report of the business of your road for the year ending September 30, 1881.

For the first four years after this Corporation was chartered, no formal printed reports were made to the Stockholders.

As the Charter of the road was received from the Commonwealth in June, 1831, fifty years ago, it seems but proper to refer to this fact in the present Report. In the Appendix will be found some interesting data relating to the early railway enterprises of Massachusetts, taken from the valuable monograph entitled, "History of the Railways of Massachusetts," prepared by Hon. Edward Appleton, one of the earlier railroad commissioners of the State, for the "Official Topographical Map of Massachusetts," compiled by Walling & Gray, and published by Stedman, Brown & Lyon, in 1871;

also, by the permission of Dr. Lyman Atwater, of the College of New Jersey, certain portions of an article prepared by him for the Princeton Review, in May, 1881, entitled "The Regulation of Railroads," have been reprinted. The suggestions made by Dr. Atwater cannot fail to be of interest to travellers and shippers of freight, as well as to the owners of shares in this necessarily precarious class of property.

It would be useless to repeat in the body of any annual financial statement what has been so well said by others.

Purchases of land at Heath Street, in Boston, at Attleborough, at Pawtucket, and the cost of a brick building at Roxbury, built for the purpose of painting and varnishing rolling stock, have been charged directly to expense account.

The gross receipts for the last eight years have been as follows:

1874	1,687,279
1875	1,581,258
1876	1,467,759
1877	1,373,361
1878	1,206,417
1879	1,178,238
1880	1,323,925
1881	1,419,312

The taxes of last year were \$20,896 in excess of those of 1879, and again we have to report an

increase of \$8,588 over the tax of 1880. The total tax this year was \$89,636.59, equal to nearly two and one-fourth per cent. on the capital.

The debt has been reduced since the last annual report, by the sum of \$20,000.

With the large outlays required during the next two years, especially in Providence, this reduction was all that seemed prudent.

Notes for one hundred thousand dollars, bearing seven per cent. interest, have been renewed on a term of years at four per cent.

There is no floating debt, and the funded debt is as follows:

Maturing July 1, 1882, Interest 7 per cent., \$100,000				
"	Jan. 1, 1883,	"	5	" 100,000
"	July 1, 1884,	"	5	" 60,000
"	Jan. 1, 1886,	"	4	" 50,000
"	July 1, 1886,	"	4	" 50,000
"	July 1, 1893,	"	7	" 500,000
				<u>\$860,000</u>

The gross receipts for the fiscal year,

1879-'80, were,		\$1,323,925.63
Those for the current year, 1880-'81,		1,419,312.96
Increase,		<u>\$95,387.33</u>

In the corresponding period, 1879-'80,

the expenses were,		\$948,772.86
For the current year, 1880-'81,		1,052,622.29
Showing an increase in expenses of.		<u>\$103,849.43</u>

It appears therefore that the receipts for this year have been more than	
the last, ...	\$95,387.33
And the expenses more by	103,849.43
Showing a decrease of net earnings, .	\$8,462.10

The full details of the business of the year may be found in the tables furnished by the Treasurer, and appended to this report, the general result being as follows:—

Gross receipts for the current year, .	\$1,419,312.96
Expenses, exclusive of taxes and interest, ...	\$934,273.53
State and local taxes, . .	89,636.59
	\$1,023,910.12
Net earnings, ...	\$395,402.84
Balance of Interest Account to Sept. 30,	28,712.17
Earnings applicable to dividends, . .	\$366,690.67
Dividends paid and declared, 8 per ct.,	320,000.00
To credit of profit and loss, ...	\$46,690.67

The returns to the Railroad Commissioners show:

The number of miles run by the trains during the year to have been, ...		865,216
Number of miles run the previous year,		852,282
More mileage, 1880-'81, ...		12,934

Whole number of passengers carried this	
year, ...	3,802,405
Whole number carried last year, . . .	3,574,104
Greater number of passengers, 1880-'81,	<u>228,301</u>
Whole number of passengers carried one	
mile, ...	42,191,736
Carried one mile the previous year, . .	<u>42,990,453</u>
Less number carried one mile 1880-'81, .	<u>798,717</u>
Tons of freight moved this year, . . .	660,290
Tons of freight moved last year, . . .	<u>669,468</u>
Decrease of tonnage, 1880-'81, ...	<u>9,178</u>

Two dividends of four per cent. each, clear of taxes, have been earned and declared.

The dividends on investments in the Union Freight Railway and the preferred stock of the Providence, Warren and Bristol Railroad* have been credited to Interest Account.

*The capital stock of the Providence, Warren and Bristol Railroad is held as follows:—

Common shares held by Boston and Providence Railroad Co....	1,851	
Common shares held by others.....	<u>1,022</u>	2,873
Preferred shares held by Boston and Providence Railroad Co....	1,430	
Preferred shares held by others.....	<u>70</u>	1,500
Total number of shares.....		<u>4,373</u>
The common shares held by the Boston and Providence Railroad Co ,		
at five dollars each, represent.....		\$ 9,255
The preferred shares held by this Company, at the par value of one		
hundred dollars, represent.....		143,000
		<u>\$152,255</u>

The equipment has been kept efficient by the purchase of three passenger cars, twenty-four box cars, and four locomotives. Three old locomotives have been broken up.

The substitution of steel for iron rails has been continued, and there remain but three miles of iron rails in the main road. In the branches there are eleven miles of steel rails.

At Dedham, ground has been broken for a new station, and the delay made for this very necessary structure has been largely due to the peculiar situation of the territory owned by the Corporation, and the difficulty of properly placing the many tracks which centre there. When built, it is believed that the station will be found convenient for passengers and an ornament to the shire town of Norfolk.

With a view to some change in the method of running trains between Boston, Readville, Dedham and intermediate stations, work for a third track between Mount Hope and Hyde Park was begun last June. When completed there will be a continuous third track between Boston and Readville.

Of the two and three-quarter miles to be constructed about three-fourths of a mile have been graded. The undertaking is an expensive one, as there is a heavy ledge of rocks to be removed, a sustaining wall of one thousand feet to be built, and two highway bridges over the road with their abutments to be replaced.

The City of Boston has nearly finished a most substantial highway bridge over the track of the road at Mount Hope, and a dangerous grade crossing, to which the public had no rights, has thereby been abolished.

At Boylston Station, the stream known as Stony Brook, passes under the road-bed twice, in its tortuous course. For sanitary and other purposes the City of Boston has already made marked progress in diverting the course of the brook to the easterly side of the railway, and we shall shortly be enabled to do away with the wooden bridges at this point.

This work accomplished, *all* the numerous water courses on the main line between Boston and Providence will be covered by strong masonry or iron bridges.

Respectfully submitted,

HENRY A. WHITNEY,	}	<i>Directors.</i>
THOMAS P. I. GODDARD,		
J. HUNTINGTON WOLCOTT,		
WILLIAM R. ROBESON,		
FRANCIS M. WELD,		
JOSEPH W. BALCH,		
ROYAL C. TAFT,		

INCOME.

Passengers.....	\$822,751.57
Freight.....	533,956.52
Rents.....	19,167.82
Express.....	30,908.73
Mails.....	12,528.32
	\$1,419,312.96

EXPENSES.

Salaries of General Officers and Clerks.....	\$31,095.96
Legal Expenses.....	7,082.86
Insurance.....	5,103.92
Stationery and Printing.....	7,725.82
Outside Agencies and Advertising.....	11,691.97
Contingencies and Miscellaneous.....	1,608.92
Repairs of Bridges.....	19,108.84
Repairs of Buildings.....	80,527.62
Repairs of Fences, Road Crossings and Signs.....	3,858.16
Renewal of Rails.....	13,905.85
Renewal of Ties.....	22,052.78
Repairs of Road-Bed and Track.....	99,133.20
Repairs of Locomotives.....	71,791.42
Fuel for Locomotives.....	107,722.11
Water Supply.....	11,681.31
Oil and Waste.....	14,395.39
Locomotive Service.....	76,340.18
Repairs of Passenger Cars.....	36,282.76
Passenger Train Service.....	44,416.83
Passenger Train Supplies.....	4,485.80
Repairs of Freight Cars.....	36,544.79
Freight Train Service.....	22,115.87
Freight Train Supplies.....	200.28
Mileage Freight Cars.....	201.87
Telegraph Expenses.....	1,839.75
Gratuities and Damages.....	9,348.33
Agents and Station Service.....	164,395.59
Station Supplies.....	18,009.54
Taxes.....	89,636.59
Attleboro Branch Rent.....	11,605.81
Interest Account.....	28,712.17
Total Expenses.....	\$1,052,622.29
Balance carried to Profit and Loss.....	366,690.67
	\$1,419,312.96

Dr.	<i>Profit and Loss Account.</i>	Cr.
1881.		
Sept. 30.	To Dividend, four dollars per share, on forty thousand shares, paid May 1.....\$160,000.00	By Balance September 30, 1880.....\$391,311.29
	To Dividend, four dollars per share, on forty thousand shares, payable Nov. 1.... 160,000.00	By Net Earnings for the year ending September 30, 1881..... 366,690.67
	Amount charged off to cover depreciation in Real Estate Account 7,450.34	
	Balance to New Account... 430,551.62	
	<u>\$758,001.96</u>	<u>\$758,001.96</u>

DR. *Trial Balance, September 30, 1881.* CR.

Construction and Equipment.....	\$4,612,774.38	Capital Stock.....	\$4,000,000.00
Stoughton Branch.....	85,400.00	Seven per cent. Bonds, due 1893.....	500,000.00
Providence, Warren and Bristol } Railroad Stock.....	152,255.00	Notes Payable.....	360,000.00
Union Freight Railroad Company } Stock.....	79,014.42	Unpaid Dividends.....	4,484.50
Real Estate.....	198,000.00	Dividend No. 90, due Nov. 1, 1881..	160,000.00
Cash and Cash Funds.....	111,462.40	Balances due other Roads, etc.....	71,847.94
Notes Receivable.....	45,825.00	Profit and Loss.....	430,551.62
Materials on hand.....	144,841.59		
Balances due from other Roads, etc..	97,311.27		
	<u>\$5,526,884.06</u>		<u>\$5,526,884.06</u>

B. B. TORREY, *Treasurer.*

APPENDIX.

From the History of the Railways of Massachusetts,
by the Hon. Edward Appleton, Railway Commissioner, taken from the Topographical Atlas of
Massachusetts. Compiled by Walling and Gray.
Published by Stedman, Brown & Lyon, 1871.

The first railway charter granted in Massachusetts, was that of the Granite Railway Company, March 4th, 1826. This company was chartered for the purpose of transporting granite from the quarries in Quincy to tide-water in Neponset River. The road was built and put in operation the next year.

In 1827 and 1828, sundry surveys for canals and railroads were authorized by the Legislature, and reports concerning them were made in 1828 and 1829. The Commissioners having charge of these surveys proposed to have the tracks supported by stone walls, capped with granite stringers, with iron bars bolted to them, and to have the roads operated by horse power. On the road to Providence they estimated that a single horse could draw a load of eight tons, including weight of carriage, at the rate of three miles per hour, working seven hours per day, or working three hours per day, could draw a carriage with twenty-five passengers nine miles per hour. They estimated the cost of this road at \$8,000 per mile, besides the land, and that the freight would

be about twenty-seven thousand tons per year, and the passengers about twenty-four thousand, and the net income \$60,000.

Several railroad charters were granted in 1829 and 1830, but the only one of these under which an organization was formed was that of the Boston and Lowell, passed June 5th, 1830. The charter of the Boston and Providence was granted June 22nd, 1831, and that of the Boston and Worcester, June 23rd, 1831, with several others about the same time, which were never used. These three, the Lowell, the Providence, and the Worcester, were the pioneer railroads of the State. The construction of all of them was commenced about the same time, in 1832, and they were all completed in 1835. The Worcester road was opened to Newton, April 18th, 1834, starting from a temporary station at Washington Street, in Boston, and was opened to Worcester, in July, 1835. The Lowell road was opened to Lowell, June 25th, 1835. The Providence road was opened to Readville, June 4th, 1834, and to Providence, in August, 1835, the stone viaduct in Canton being the last piece of work to be finished.

The early charters for railroads were framed on the supposition that they would be used like turnpikes; and provided that any one might enter upon them with his own engines and cars, by paying tolls.* Availing themselves of this provision, certain parties, in 1837, organized themselves under a charter for the Seekonk branch proposing to build about a quarter of a mile of road at the Providence end, and a separate station in Boston, and to use the whole intermediate part of the Boston and Providence road with their own engines and cars. For about three years, the operations of these parties

*In a valuable paper entitled "A Plea for Railroads," by William A. Crafts, published in the October (1881) number of *Scribner's Magazine* (*The Century*) p. 899, reference is made to this peculiar provision.

were a serious annoyance to the Boston and Providence Railroad Company ; but the matter was then settled by the purchase of the property of the intruding corporation, and the passage of a law by the Legislature forbidding one railroad corporation to enter with its engines upon the road of another company, unless by their consent.

Of course, at this early date, both the construction and management of railroads were experiments, and everything was to be learned from actual practice. The first locomotives weighed only eight or ten tons each, and the earliest cars resembled two or three stage-bodies set together on a platform. At the present day, such engines and cars would not be supposed to be intended for use on a railroad. It was also supposed that nothing would answer for fuel but pitch pine, and some of our railroad companies purchased extensive tracts of woodland in Virginia and other Southern States, to keep themselves supplied with fuel. It did not take many years, however, to explode this idea, and to show that the wood along our own railroads would make steam just as well as that brought from a distance. Some of the early reports, in the light of later days, afford amusing reading. Thus, the directors of the Worcester road, in their report for 1838, state very complacently that their trains have run regularly during the whole year, and only eight trips have occupied more than four hours. On many of the roads the rails first laid were too light, and heavier ones were soon substituted, Still, the business as it was developed upon the roads considerably exceeded the original estimates, and though the expenses of doing the business over-ran the original estimates in still greater ratio, yet the net result of the first few years was so encouraging that the construction of railroads was rapidly extended.

Extracts from the article entitled, "The Regulation of Railroads," by Dr. Lyman Atwater, of the College of New Jersey, reprinted by his permission.

[From "*The Princeton Review*," May, 1881.]

* * * * Reasonings based on supposed analogies between railway and other modes of transportation are very apt to mislead. English railroad legislation long proceeded on the theory that they were part of the "king's highway." It tried to fix tolls of particular articles or classes of articles, till they were found to be beyond enumeration or feasible classification, and the whole attempt, like many other forms of legislative interference, has been gradually abandoned as beyond even the "omnipotence of Parliament." With the advantage of unity of government and smallness of territory, regulation of railroads by Parliament has been getting more and more minimized, till some of the pet schemes of our own reformers have been discarded, because outgrown or proved mischievous by experience. The railway is a thing *sui generis*. It is a highway, resembling a turnpike or canal only in this respect: that it is for purposes of travel or transportation by all who desire to use it, according to the conditions peculiar to it. If built by private capital, it is privileged to obtain a fair remuneration for this, provided the public use of it is sufficient for the purpose.

The fixing of the rate of highway tolls by the charter, or by the legislature, is confined to a few simple things, for which just and plain rates can be made with comparative ease. Neither are such roads common carriers. Those who use them may become common carriers, as they may use any road-way or water-way, natural or artificial, in conformity to its nature,

for this purpose. But railroads, while possessing immense capacity for transportation, can only be used by their owners or lessees. Not only must the road-bed and track be theirs, but all the cars, engines, rolling-stock, machinery, and conveniences for transportation must be so, and worked wholly by them. Theirs alone is the power and responsibility. Otherwise these roadways could not be worked a single week without numerous collisions and wreckings. * * *

We see no sufficient reason for anti-discrimination statutes based on the assumption that, in order to be reasonable and impartial, rates must vary just in proportion to the amount, distance, or speed of transportation. In order to partiality, unequal favor must be shown to different persons in like circumstances. Now this does not apply where a greater proportionate charge is made for a shorter than a longer haul of the same goods, when the expense of terminal handling is the same for each. A high authority, speaking from experience, says that the terminal expenses in New York, interest of capital and all else considered, are equal to one hundred miles of haulage. Consequently the cost of freight carriage from New York to Newark, nine miles, is more than half that to Philadelphia, ninety miles. It varies, too, with severity of grades, cost of construction, fuel, etc. Nor does a failure to vary charges as the amount carried, *ceteris paribus*, necessarily infer partiality. It is so evident that larger amounts can be carried proportionably cheaper than smaller ones, that this has generally been conceded by the most extravagant adversaries.

* * * * *

Mr. Simon Sterne, in his great argument before the Special Assembly Committee *versus* the railroads, [relating to the system of pooling,] admits that it "has brought a change for the better from that which prevailed immediately before the pooling arrangements were made" (p. 97). He insists that

it "has been discovered in this country and England that competition was not the proper regulator of railway charges" (p. 104).

The several doctrines on this subject insisted on by the assailants of the proper autonomy of railroads, would either destroy them or greatly aggravate the evils of which they complain. Suppose that, first, there could be no stop or check to the internicine competition at Chicago, St. Louis, and elsewhere, and, next, that railroads must charge the same proportionate rates from all other points as from these. If they should continue the competitive through business, and do all other business at these ruinous rates, this would soon bankrupt and wreck them. If they discontinued the through competitive business, they would be obliged to charge higher local rates from non-competitive places than ever. Or, if this were impracticable, the road would sink in its condition, equipments, capacity for speed, safety, and accommodation far below what it is when great through trains help sustain and make profitable a more perfect road, and increased accommodations in every department. All places gain on the whole, even if any lose in some particulars, from the reinforcement of local with through business. They commonly have better roads, better tracks, better trains and more of them. * * * * *

Do those who are declaiming and raving against corporations really think themselves through to the logical outcome of such assaults? It is utterly impossible to harness the gigantic forces of nature to serve man, as steam is now made to do, without employing immense masses of capital for this purpose. Small capitalists are debarred from all possible participation in this kind of property, unless it is divided into shares capable of distribution and ownership in larger or smaller parcels, held and managed by a corporation. Otherwise these vast

properties so necessary to the convenience, commerce, and productiveness of the country, must be exclusively the private property of single or few individuals. Is that the alternative so much coveted? Probably not. The outcry against corporations is an outcry not only against a few railroad magnates, but against the vast multitude of small owners, including widows and orphans and the prudent laborer whose savings are invested in them, whether they be railroads, canals, banks, mines, manufactories, steamboat companies, or whatever else. To hurl these catapults at corporations is but saying, either that the productive properties they hold shall be annihilated; or that they shall be owned by individuals, single or in partnership; or that they shall be owned by the State—from which latter condition we might expect utter political demoralization and national bankruptcy. * * *

Never was a truer sentence uttered than that of the late Dr. Chapin at some festivity in New York: "THE LOCOMOTIVE IS A GREAT DEMOCRAT." Nowhere, not even at the polls, are all more completely on a level than in the American railway-car, and that, too, in the enjoyment of advantages and comforts unknown half a century ago to the proudest monarchs, with thousands of chariots and horses at their command. But the steam-chariot cannot thus be a great democrat without being also, within due limits, a great autocrat. On his own road he must be sovereign. All else must give way and clear the track. Nothing must or can stand before him. * * *

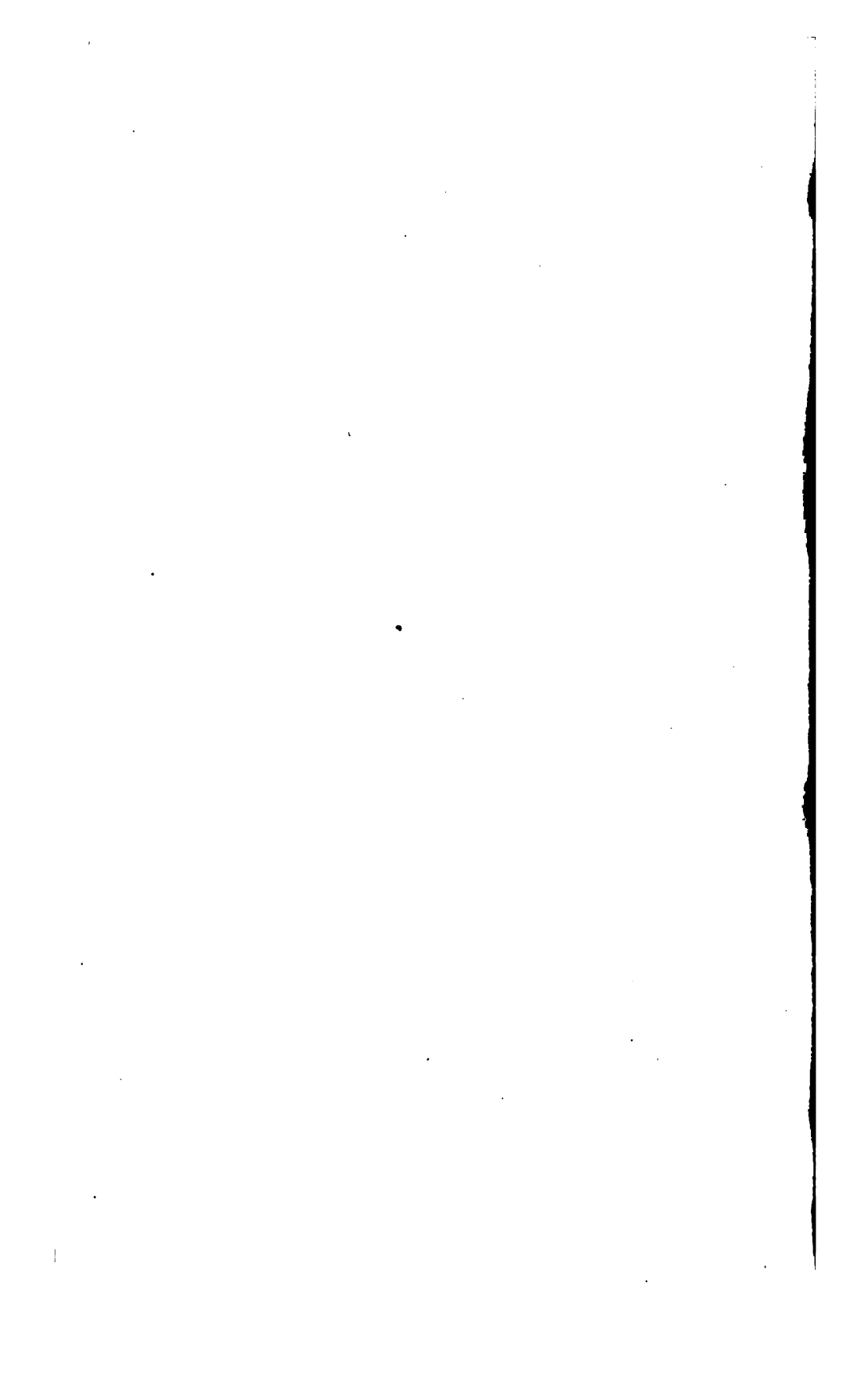
So, if the locomotive can move man and his products with a resistless energy and speed, a rotten tie, a loose spike, an unseen flaw, a mischievous boy, or senseless animal may get in its way, and, even if destroyed itself, precipitate it and its train to utter destruction. * * *

The risks, therefore, of railroad investment are something tremendous, arising from various sources: the frequent lack

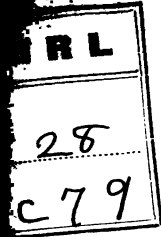
of remunerative business; the liability to lose it through the construction of competing lines; the exposure to all sorts of destructive casualties, from fire, flood, tempest, collisions, flaws in rolling-stock or rails; the neglect or forgetfulness of servants, in all of which the railway company, *i.e.* stockholders, must indemnify for losses and injuries, sometimes of prodigious magnitude, consuming profits, and even bankrupting roads. At best there is the constant exposure to new and competing roads which may render a property, before valuable, utterly or comparatively valueless. The risks are therefore immense. All losses must be borne by the stockholders first and creditors next. Must the shareholders be cut off from all chances not only of fair interest upon the capital invested, but even of generous profits in the very exceptional instances in which rare opportunities and management may honestly yield them? If so, this is unlike any business. Capital will instinctively be shy of it if it must bear the most unlimited losses, with no chance for the gains when they are handsome. In point of fact the cases are few in which the railroads have averaged six per cent. from the first; fewer still that have averaged eight. Most roads now solid and paying handsome dividends for years paid none. On the other hand, many roads once dividing ten per cent. have come to divide nothing. As to stock dividends, in slang phrase called "stock watering," if they represent earnings applied to the improvement of the road rather than to dividends when earned, what can be more just? If made on no such basis, they are only the company's choice as to number or form of shares.

As a general principle, we doubt the policy of restricting the earnings of railroads by legislation. We think prosperous railroads a far greater blessing to the community than bankrupt, starving, or poorly paid ones. They are more likely to keep up and advance their roads to the highest state of speed, safety.

commodiousness, in order to keep and increase their business, by cheapening its cost to themselves and the public, while they increase its quantity. Thus only can they withstand competition. Thus only can come the substitution of steel for iron rails; of heavy rails for lighter ones; of heavy for slender ties; of broken stone for ground ballasting; of a double for single track; of a triple or quadruple for a double track; of stone or iron for wooden bridges; of crossings above or below other roads instead of at grade, or, where this is impracticable, the substitution for it of gates and flagmen; the increase of terminal facilities so necessary and yet so costly in our great marts of trade. A railroad is never completed, and the further it is perfected in such a way as to lessen its risks and the danger to those who use it, to cheapen and expedite its service, while this is responded to by an increase of business that warrants and takes advantage of it, the better for the public and the road. * * * *







REPORT
OF THE
COMMITTEE FOR INVESTIGATING
THE
AFFAIRS
OF THE
BOSTON AND PROVIDENCE RAILROAD
CORPORATION.

15

25

APPOINTED BY THE STOCKHOLDERS,
JANUARY 14, 1857.



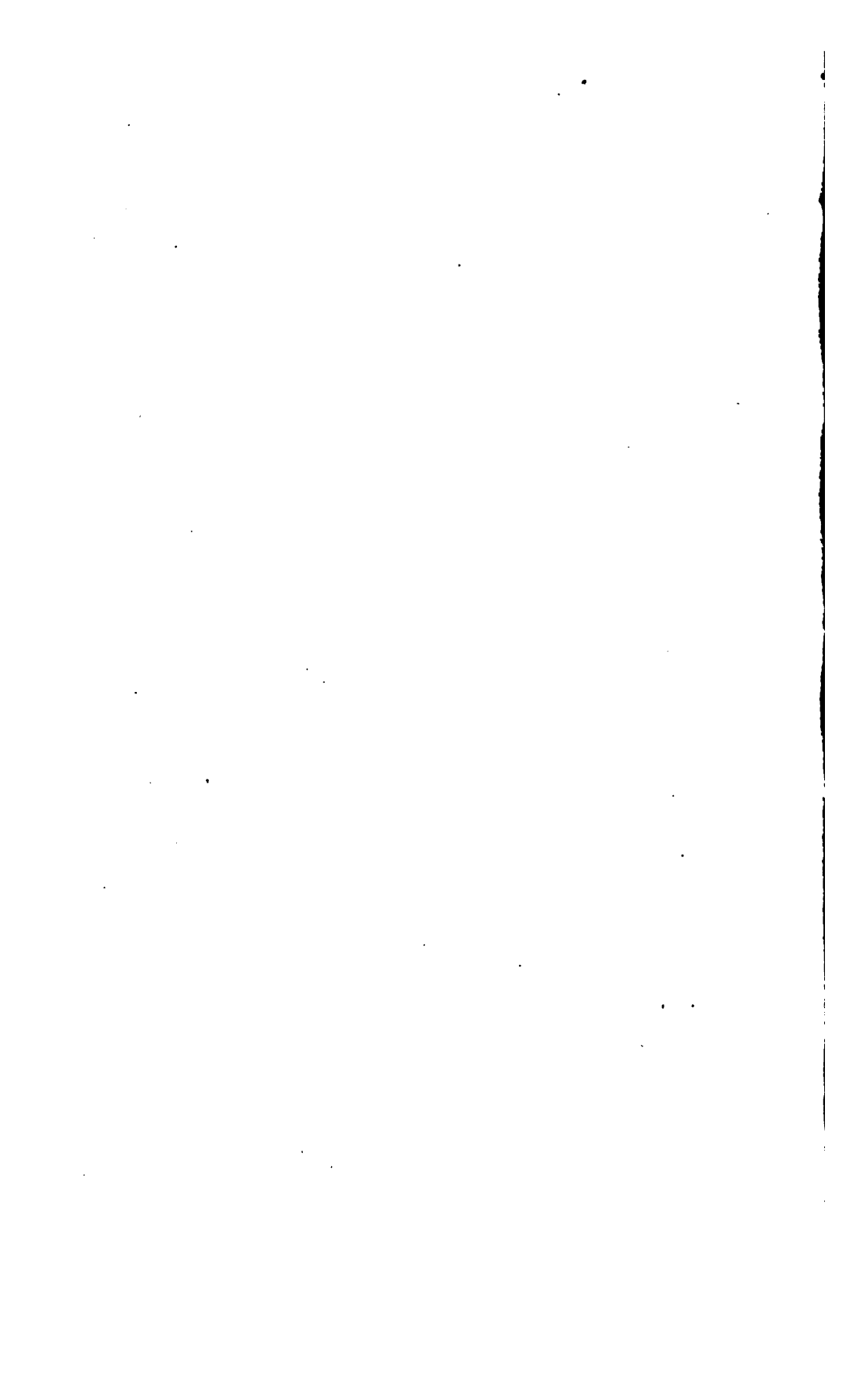
BOSTON:
PRINTED BY HENRY W. DUTTON AND SON,
Nos. 33 AND 35 CONGRESS STREET.
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1857.



REPORT.

THE committee appointed at the annual meeting of the Stockholders of the Boston and Providence Railroad, on the 14th day of January, 1857, to investigate if any payments have been made on false pay rolls, charges against W. Manuel, a late road master, and all other matters pertaining to the business of the road, offer the following Report:—

A few days after the meeting, the committee received a communication from the clerk of the corporation, that Mr. Thomas C. Smith, who was chosen, declined serving on the committee, and the investigation has therefore been conducted by its remaining members.

The only specific charges brought before your committee were made by Mr. Samuel Winslow, as follows: That, during the summer of 1852, Mr. W. Manuel purchased of D. L. Shepard of Foxboro', for account of Boston and Providence Railroad, 536 sleepers at 38 cents each, for the amount of which said Shepard signed a blank bill and receipt, which Mr. Manuel filled for 725 sleepers at 28 cents each. The evidence offered to the committee was a written statement from Mr. Shepard to this effect; but upon sending to Mr. Shepard for the precise date of the transaction, answer was returned that he finds in his book, credited to Boston and Providence Railroad, October 4th, 1852, the sum of one hundred and two and 96-100 dollars, which he says was the probable sale or date of bill. On examining the vouchers of the corporation, we find a bill from D. L. Shepard, under date of October 5th, 1852, for 286 sleepers at 36 cents each, amounting to one hundred and two and 96-100

dollars, being the same sum as credited by Mr. Shepard. This bill is wholly in the hand-writing of Mr. Shepard, and the charge is therefore entirely unsubstantiated.

Mr. Winslow also charged, that, in the month of September, 1853, Mr. Manuel paid Stephen Hardy for twelve days' work on the road while he was off the road, and gone to the eastward. The committee find that Hardy was credited, on Manuel's pay roll for that month, with full time; but have been unable to substantiate the fact that he was off the road, or away at that period, as the only party whose name was given as having knowledge on the subject, says he has no means of knowing the time of Hardy's absence.

We called upon Mr. Nason for a copy of other charges which had been preferred by Mr. Winslow against Mr. Manuel, but were informed that they could not be found; and notified Mr. Winslow that it would be necessary to have a copy of those charges furnished, if he wished them investigated. No answer was ever received from him.

Complaints having been made of fires occurring on the line of the road occasioned by sparks from locomotives, for which the company have paid considerable damages, we would recommend that the grass on the line of the road, in exposed places, be burned in the spring, under the direction of the road master.

Your committee have devoted considerable time and attention to the examination of the method of keeping the accounts of the corporation, in its different departments, and are satisfied that in this particular there is a necessity of a great and radical change. Nothing can be more necessary, as it seems to your committee, for the success of corporations as well as individuals, than that there should be, to as great an extent as possible, a correct system of accounts,—which shall act as a check against fraud and error, and for their detection if any such exist. Since our investigations were commenced, an entire new system has been devised by the treasurer's clerk, for keeping most of the accounts,—which is to go into operation on the 1st of December. Of course we are unable to give any opinion of their practicability, as they are, as far as we have seen them, a system peculiar to themselves, and dependent upon an after

examination to prove their correctness. We should have preferred a system embracing a general bookkeeper for all the accounts before they reach the treasurer's office, who should handle no money, and whose books should be a complete check for the correctness of the amounts received from the various agents of the corporation.

In commencing our investigation, we found a difficulty in getting a correct idea of the accounts of the corporation from any one source, as each department having connection with the accounts seemed to have a system peculiarly its own, which was only known in that special department; and there could be found no one to whom all were accountable, or who could give information in regard to the method used from beginning to end.

The business of the treasurer's department is only to keep safe, and account with the corporation for all moneys received, and nothing more,—the debits being made in that department by returns made from other officers and clerks, but without any knowledge of their correctness. No ledger by double entry has been kept in any other department except the treasurer's office. The treasurer's accounts, as far as they have been examined by us, are very systematic and correct, with an exception, to which we shall presently advert.

The stock ledger has been personally examined by your committee, and the number of shares credited on the 1st of November found to be correct. It may not be uninteresting to the stockholders to know that since January, 1856, less than 4600 shares have changed hands, of which nearly 1600 shares have been purchased by old stockholders.

Upon an examination of the trial balance, we found that the vote of the stockholders, passed February 6th, 1856, "that the construction account be now closed, not to be opened, excepting by order of the stockholders," had not been literally executed; there being seventeen accounts in the ledger, representing in the aggregate the cost of construction, a number of which have been varied since that vote was passed, leaving the amount charged as construction thirty thousand and ninety-two and 86-100 dollars less on the 1st of June, 1857, than it stood on

the ledger, December 1, 1855. A small portion of this decrease is for land sold, but the greater portion a reduction on rolling stock and superstructure. As it was not the expressed desire of the stockholders to reduce construction account, but to close it where it was, we think it more proper to carry these various accounts to one head, under the name of construction, and the decrease to the credit of new accounts, to be used when needed, to keep the road equal to the value of construction when closed.

Your committee were much astonished to find that the vouchers for the disbursements of the corporation, consisting of bills for supplies, and of pay rolls for labor, were paid by the treasurer on the simple approval of the superintendent, and without any examination in the treasurer's department of the correctness of their extensions or additions; nor was their surprise diminished, when, upon pursuing their inquiries, they found that they had never been subjected to an examination in these particulars by any one. The superintendent said that he generally added the bills before approving, but did not extend them. We therefore personally examined the correctness of the vouchers from September 1, 1856, to August 31, 1857, finding forty-one errors in bills, and thirty-three in pay rolls,—there being more or less errors in the vouchers of every month. These errors were not of large amount, and were some of them in favor, while others were against the corporation. The most complicated pay rolls were made out by the superintendent; never examined by any one; approved by himself; and in the greater portion of these, errors were found. Your committee also found reports by the superintendent to the treasurer, of amounts chargeable to the accounts of other corporations, for services performed, the correctness of which we had no means of verifying; nor could we find that any one had ever examined them; and of course they were equally liable to error as one in which we found an error in extension of nearly sixty dollars. We do not desire to reflect on the correctness of the superintendent, as we were astonished at the amount of figures and writing done by him personally,—and to this we shall have occasion to revert in another part of our report,—but we do

not believe it safe to trust, in matters of consequence, to the figures of any one, without examination.

There seemed to us, while examining the vouchers, reason to think that, from the nature of some of them, it was almost impossible for any one to know whether the corporation had ever received all the articles and services charged; and an improvement may be made in this respect.

The vouchers for articles furnished the machine shop, which are purchased by Mr. Griggs, are all approved by him, before being sent to the superintendent; but many others, of considerable amount, bear no signs of being approved by any one having personal knowledge of their correctness. By reference to the vouchers, we find that a considerable amount of money has been paid by the corporation to its former superintendent on account of investigations in coal burning, and we could not find out how much more was still due on the account. With a president, superintendent, and master machinist, at an aggregate salary of over seven thousand dollars per annum, we think such an outlay unnecessary,—particularly as we find that the engines used on this road for burning coal have been altered from wood engines, at a very slight expense, by Mr. Griggs, without regard to any investigation on the subject by other parties. There is also the sum of eight hundred dollars paid Mr. Nott for investigations concerning quantity of wood burned.

Your committee do not approve of the manner in which the moneys of the corporation are disbursed on the pay rolls, and some of the bills, as giving too much opportunity for defrauding the corporation, if parties are so disposed. The pay rolls are made up by the various road masters, agents, &c., and after approval by the superintendent, the amount is paid by the treasurer to the maker of the pay roll, which is by him disbursed to the parties on the roll. We notice on many of these rolls that a considerable portion of the money is paid to persons unable to write, whose mark is made under the direction of the party making and paying the roll, and who is the only person having cognizance of the existence of such person. There can be no security of the correctness of the amounts so paid, and no check against fraud. The same remark will apply to bills contracted and paid by the same person.

The plan adopted by the Boston and Lowell and Boston and Maine Railroads we think to be decidedly better, viz., that in no case shall the party employing the workmen in the different departments have any thing to do with paying them. The pay rolls are made by the various agents, approved by the superintendent, and paid by a clerk who goes over the road for that purpose. It will readily be seen, that in this way a check is made against fraud on the part of any person making a pay roll.

In the freight accounts of the corporation, as made up monthly by Mr. Nason, the present superintendent, there exists some error, dating back beyond July, 1855, its amount at that time having been two hundred fifty-five 73-100 dollars, and varying every successive month to September, 1857, when the amount short in the freight department is over seven hundred dollars. This of course makes the amount as charged on the books of the treasurer to Mr. Nason, on account of freight, incorrect to this amount, as showing seven hundred dollars more assets than the corporation really has. At the suggestion of the committee, a competent clerk was employed by Mr. Nason to find the discrepancy, if possible. From the fact that there was no period for several years, when the account had been correct, there could be no starting point, and it has therefore been impossible, from the singular manner in which these accounts have been kept, to straiten it out, although numerous errors were found, sometimes decreasing and again increasing the amount. The system of freight accounts is very bad, and being entirely by single entry, there is no way of proving them, or of rectifying a mistake when one exists. The same system has been continued to the present time, as was commenced in the infancy of the business of the road, and which, however well it might have answered then, will hardly do in the great increase of, and change in its nature now. All the freight accounts for the road, with the exception of Providence and Dedham, as well as the business done in connection with other roads, pass through and are merged in the accounts of the Boston freight office, which causes much greater liability to error, than if kept entirely distinct. This, upon a different plan, is to be continued by the new system before spoken of.

Your committee would recommend the entire abolishment of the present habit of charging freight bills to a large number of truckmen, who are sometimes indebted to the corporation to an amount of several thousand dollars, and from which the corporation receives no benefit. The bills for freight are given up RECEIPTED to these truckmen; re-charged to them on various memorandum books, and money paid in by them on account, without any receipt being given. Independent of the very loose and unbusiness-like manner in which this is done, we see no reason why these truckmen should be furnished by the corporation with capital to enable them to give credit to their customers. The same habit of giving up receipted bills to merchants with whom the road has accounts, should be altered. The requirement of a particular form of receipt for the shipment of merchandise to New York, differing from the common form in use by all other roads leading from Boston, is injurious to this corporation, and no other reason can be found for its continuance, except "that it was the vote of the directors some ten years since." The adherence to useless forms, which are of no more avail than the stereotype "all baggage at the risk of the owner," tends to make a line unpopular, while a spirit of accommodation, promptness in the delivery of freight, and settling damages and overcharges without procrastination, have a tendency to increase the business of a railroad, equally as much as the same qualities affect for good or evil the business of a private individual.

The accounts of the season ticket or commutation passengers were found to have been kept in a very unsatisfactory manner. In an early stage of our investigation, we asked the superintendent's clerk having charge of this account, for a list of persons who had been commuters and had not renewed their tickets, and were informed that no such list was kept, but that it could be ascertained by an examination of the season ticket index or ledger. On the 31st of July, we took from that book a list of over one hundred and fifty persons whose tickets had expired at periods ranging from one to sixteen months, concerning whom there was no knowledge on the part of the officers of the road whether they had ceased to ride on

the expiration of their tickets, or were still passing daily over the road. One of the committee recognized several as being constant passengers, some of whom had not renewed their tickets for the longest period above mentioned, and called the attention of the superintendent to that fact. The excuse given seems to the committee to be without any good foundation, viz., "that it was impossible for the conductors on the special or short trains to know all the commuters." Of the number of apparently unrenewed tickets, many have, upon investigation by a conductor specially detailed for the purpose, been returned as having left the road, but from the time that had elapsed, it is impossible to know how long many of them might have used the road, after their tickets expired. The fact that a considerable number of persons, whose names were on this list, have, upon being called upon, paid the amount due from them, shows that there is no impossibility in looking up delinquents, provided proper means are taken to do so. In one case the amount due and received from one passenger and his son for riding since April, 1856, was three hundred dollars. The committee found that where a passenger and his son had been allowed to ride from Dedham one year without paying, his note, one hundred and fifty dollars, was taken, and this note is believed by the committee to be worthless. Another party has since paid over two hundred and forty dollars for riding eight and a half years. It is impossible to know how many may now be using your road, who have at some remote period been commuters, and still continue to pass as such. Your committee had hoped that the importance of this subject would, ere this, have caused the attention of the officers of the road to be given to it, by putting in motion the very simple means for determining the fact.

Under a proper system, and a system carried out, (for, however good in the commencement, if not carried out properly, it ceases to be a system,) there can be no more difficulty in keeping a correct season ticket account than any other. In fact, the corporation have the whole matter in their own hands, as they have the power to prevent a passenger from riding, unless he pays his fare, and the statute imposes a very severe penalty for evading such payment. Season tickets expire only four times a

year, and from the fact that there are less than five hundred season ticket-passengers, there can be no reason that the conductors should not be able to call them all by name, for what merchant but has occasion to be familiar with more than double that number of customers. At any rate, orders should be imperative, that no one should be passed as a season ticket passenger, unless known by the conductor to be such. If he does not know that fact, he must request him to show his ticket, or to give his name, which may be verified by a book furnished him for that purpose. In fact, your committee believe it to be necessary that all season ticket holders should be required occasionally to show their tickets, in order to refresh the memory of the conductor. The practice on another road is to call for a show of tickets for a few days at the first of every quarter, and again during the quarter under direction from the superintendent to the conductors to require it. This last cuts off the chance of a passenger being able to ride without a ticket. One of your committee has been a season ticket passenger over your road, for over seven years, and has never been required to show a ticket but twice during that time.

It is urged that commuters dislike to be obliged to show their tickets, and would find fault with such a requirement. To judge of the character of commuters as given by officers of railroads, one would suppose them a very unamiable, unjust and dishonorable set of beings; but we, who are personally acquainted with a very large number, know them to be in general, gentlemanly, honest and upright men, who are willing to conform to all proper and reasonable regulations. That there are exceptions to this, we well know, and also that there are among them some who are prompt to pay without urging, some forgetful, some purposely dilatory, and, we regret to say it, some who are dishonest enough to ride without paying, if they are allowed to do so. One fault has been in this corporation that those who came forward voluntarily to renew their tickets, have been treated as though they intended to defraud, while those, who, from forgetfulness, or intentional neglect, have not renewed their tickets, have been suffered to ride on without a word being said. We do not

mean to accuse any one of an intention to treat customers rudely, but it has been the fault of the system of keeping accounts.

We believe if commuters understand that the rule of prompt payment for tickets is to be strictly enforced, and a list be furnished at the expiration of every quarter to each conductor, of tickets expired and unrenewed, with positive orders to find the parties if still using the cars, *and it is made the business of some one to see that these orders are obeyed*, there will be no difficulty in remedying this evil.

The rule lately adopted of offering pecuniary benefit by prompt renewal of tickets, will have a very good effect.

We would recommend that season tickets should be furnished to all persons under eighteen or twenty years of age at half price, and not confine this privilege to those who attend school. Young men in stores get but a small compensation for the first year or two, and where, as in many instances, there are two or three of these in one family, the expense of their fares is a very serious item, in many instances sufficient to determine a change of residence.

We think a change necessary in the ticket system of this corporation. No other road leading from Boston has so many depots where there are no ticket offices as this, and the consequent result is that a very large amount of money is collected in the cars. Between Boston and Dedham the only ticket office is at Roxbury. The number of tickets sold for the eleven months ending November 1, 1857, for the Dedham Branch cars, was 94,647, while the number of passages returned by conductors as paid in the cars for the same period was 66,568, equal to over 40 per cent. of the whole number; while to and from the Jamaica Plain station alone, the tickets sold were 23,654, and passages paid in cars 28,109, or a monthly average of 2,550. The amount taken in the cars on the main road is about 11 per cent. of the whole passenger receipts. We would recommend that in future, tickets be sold at all the stations, and also that an alteration be made in the Boston depot, whereby all passengers shall pass through a gate leading to all the tracks, and that no one be permitted to pass without a ticket.

As the depot is now arranged, it needs a pilot for a stranger to find out which cars he is to enter, as the trains run out from three different tracks; but by having but one entrance to all, the person in attendance at the gate could easily point out to the passenger the train he was to take. If an arrangement of this kind is made, the conductors, whose time at present is almost entirely taken in making change, and in recording the money so taken in order to make their returns, would have much better opportunity to collect their tickets, and to look after their passengers and the conducting of the train.

While we have no reason to doubt the honesty of the conductors, we deprecate the policy of having so large an amount of money pass through the hands of any one, without a check. It may be said that the sale of tickets at all the stations will be attended with extra expense, but we believe it can easily be done at the smaller stations by the present station agents at a slight advance in salary, and at any rate that any business worth doing, is worth doing properly.

The officers of this corporation claim that their system of keeping the accounts of single tickets is superior to that in use on other roads, but we must confess that we are unable to see the point in which that superiority is found. No charge or account is made with any ticket agent of the quantity of tickets furnished, and the only check upon the sales, is the counting of tickets after they are taken up and returned by the conductors, and comparing the result with the ticket sellers' return. The tickets on the long routes are stamped with the date of sale, and are used but once. If ALL these tickets are returned to the superintendent's office, the check may be very well, but what can be said of the great number of tickets sold for Dedham and the shorter routes, which are used until worn out, and concerning the quantity of which, now in the pockets of passengers, for which the road is accountable for a passage, no one connected with the corporation has any knowledge. Your committee have suggested to the officers of the road, the propriety and necessity of keeping a regular debit and credit account of tickets furnished to ticket agents, but are answered that the tickets are of no value until issued, as they can be

multiplied to any extent. While we acknowledge that in the style of tickets now in use on this road nothing can be easier, as they are nothing but a simple piece of card, without any signature, and which can be printed by a child's printing apparatus, we do not believe the objection will hold good if a proper ticket is used, with ordinary safeguard against counterfeiting. We therefore recommend that a regular debit and credit account be kept with ticket agents of all tickets furnished them.

There can be no doubt that one of the most serious errors in railroad management, is that arising from the free pass, or "dead head" system, and we feel assured that in no other way can a stop be put to the evils arising from the habit of granting or recognising free passes, except by a stringent resolution on the part of the stockholders of the various railroads leading from Boston, forbidding the same. While we do not desire any hasty or ill advised action on the part of the stockholders of this road, we shall be glad to have this matter fully discussed in all its bearings at the next annual meeting. This subject has engaged the attention of all investigating committees, who have generally reported adversely to its continuance, and it has afterwards been referred to directors, while the evil still remains in full force. It is very evident, therefore, that if it is to be abated, it must be done by the stockholders themselves, as the directors of our various railroad corporations have been either unwilling, or have feared to take the responsibility of being the first to abolish this system. The only arguments we have heard used for its continuance, are the benefits arising from having officers of railroads pass over other roads than the one with which they are immediately connected, and the injury to any one road from its discontinuance of free passes, while other competing lines still continue to grant them, by inducing freight and travel over such competing lines, through the influence of parties disappointed in obtaining a free pass over the road refusing to grant it. We do not believe officers of other roads will pass over this road unless on their own private business, or on the business of their road, and the stockholders in the various roads leading from Boston, being to a considerable extent the same, we think they will readily

join in any measure which may be proposed by the stockholders of this road, for abating this evil. The views of your committee are so well expressed in a letter from a prominent financier and railroad president, published a short time since, which we doubt not will be new to most of the stockholders of this road, that we venture to offer the following extract on the subject of free passes:—

“The issue of free passes over the different roads cannot be defended on any ground whatever. They are as gross an act of injustice towards those members of the community who do not obtain them, as towards the stockholders of the different companies who have contributed the capital employed in the construction of the roads, which have proved so useful and so profitable to the community at large, but so ruinous to the unfortunate stockholders. At the commencement, free passes were, undoubtedly, issued only to men who had rendered services, of some kind or another, to the companies issuing them; but as no rule can guide their issue, the introduction of the system in favor of those who had some claim on the companies, gradually led to its being availed of by every one who had any means or pretext of approaching an officer of a company, and sufficient assurance to make the request of him. That there can be no guide to an officer of a company in this issue of free passes is very evident. If it be expedient to give a free pass to the editor of an influential paper, having a large circulation, upon what ground can it be refused to the editors of papers having less influence and less circulation? If it be expedient to give free passes to the principal proprietor of a leading hotel, shall it not be given to his junior partners, and to the proprietors of all other hotels? If a merchant sends traffic producing \$5000 income to the company, and is therefore judged to be entitled to a free pass, upon what ground will it be refused to a merchant whose traffic is \$4500 per annum, and so on, *ad infinitum*, until it reaches the man whose traffic produces but \$50 per annum, and even the clerks of parties who influence traffic, so as to insure the influence of the latter over their employers? The result is, generally, that a large number of persons succeed in obtaining free passes, OVER ALL ROADS, without the slightest

return, in any way, to the roads which issue them; whilst the unfortunate stockholder, who receives no dividends, is generally made to pay for his ticket when travelling on his own road.

"Another class of claimants for free passes are the employees and officers of railroad companies. It is common to have a present or former employee of a railroad company travel all over the United States, with a circular letter stating his claim to a free pass. Why should the officers or employees of a railroad be entitled to a free pass over any other road, or even over their own road, when not travelling on the business of their company, any more than any other person? The fact that they are employed by a railroad company, who generally remunerates them liberally for their services, ought to make them equally liberal towards the railroads, instead of its being a reason to claim a service from them without compensation. What would be thought of a clerk in a merchant's employ, who should claim, besides his salary, the right to take or use the property of his employers, and their fellow merchants, without remuneration?

"But it is said, by railroad managers, that if free passes are refused to editors, proprietors of hotels, officers and employees of other railroads, merchants, clerks, &c., &c., they will exert all their influence to divert the traffic to other lines that will grant them. Would respectable men thus act in opposition to their own actions? Do editors send their papers, and insert advertisements, without remuneration? Do hotel proprietors allow a large portion of the community to live at their hotels without cost? Do merchants part with the commodities in which they deal, to their friends and acquaintances, without remuneration? Do officers and employees of railroads, and merchants' clerks, ever labor without salaries? This opinion of railroad managers is, in fact, a vile libel on the respectable members of the above classes; but, were it true, what influence could they exert when the motive for their action would be so apparent?"

The investigating committee of 1856 recommended "that no persons but the officers of the main road, those persons who by contract have a right to a free pass, and persons in the employ

of the road making the specific trip for the business of the road, be permitted to go free, and that all other persons going over the road pay their fares." The subject was referred to the directors, and in order that the stockholders may know how the matter now stands, we subjoin the following record from their doings on this subject:—

At a directors' meeting, February 15, 1856, the President and Mr. Russell were appointed a committee to report upon the subject of free passes, and at the directors' meeting of March 6th, 1856, the following report was submitted.

"The committee to whom was referred the subject of free tickets and passes, report, that the following persons should pass free upon the road, viz. All directors and officers of the road, including in this description, ticket clerks, and clerks who reside upon the line of the road, presidents, superintendents, treasurers and solicitors of connecting roads.

President and superintendent of any other roads, upon a pass to be signed by the president or superintendent of this road, and to be given at their discretion.

Repairers of the road.

Station agents upon a pass given by the president or superintendent, to be given only when such agents are travelling upon the business of the road. Such other persons in the employment of the corporation as the president or superintendent may from time to time deem expedient or proper to pass.

Persons deemed objects of charity by the president or superintendent.

Agents from other roads in pursuit of lost luggage or cars.

The agent of Propeller Company at Providence.

Drovers, when taking an entire car, and travelling with their cattle in the freight trains.

The superintendent of the Telegraph line, and persons travelling to make repairs on said line and having a pass.

And, that no other persons shall pass free in the cars, excepting the Board shall think proper to include the directors of

connecting roads, or some of them, and excepting the employees of connecting roads as hereafter stated.

In regard to the subject of Directors, the committee would state, that the directors of the Stonington road, and the proprietors of the boats between Stonington and New York, and their families, are by contract entitled to pass over our road free, until November 1st, 1858.

The Stoughton Branch and Easton Roads are operated by this corporation entirely, and there would seem to be no good reason for giving free tickets to their directors.

The other roads in connection with ours are the Taunton Branch, the New Bedford and Taunton, the Providence, Warren and Bristol, and the Providence, Hartford and Fishkill, and in regard to the directors of these, the committee submit the matter to the Board, without any expression of opinion. It will be observed that the families of no persons are included in the list as above recommended.

It will be recollected that there are certain persons with their families who are entitled to pass free on the road, under contracts made when the road was built, and in consideration of land taken by the corporation.

The committee recommend that persons in the employment of connecting roads should be permitted to pass free upon this road while travelling upon the business of such connecting road, that fact to be verified by the president or superintendent of that road, in each case by a pass to be signed by one of them.

The committee recommend that the superintendent be instructed to furnish each conductor with a list of all persons entitled to pass free upon the road, excepting, that the names of road repairers need not be given; and that they be strictly prohibited from passing any other person, under any pretence, excepting upon a pass signed as above-mentioned, and that the conductors make a daily return of all persons passing free, and that all passes signed by any persons be immediately returned to the superintendent's office.

For the committee,

(Signed.)

C. H. WARREN.

At the same directors' meeting, March 6, 1856, the following vote was passed :—

Voted, That the directors of the Taunton Branch, New Bedford and Taunton, Providence, Warren and Bristol, and Providence, Hartford and Fishkill, Boston and Providence Railroad Transportation, Stoughton Branch and Easton Branch Railroad; and also, W. R. Lee, in consideration of the services rendered by him, be permitted to pass free over the road, and the report of the committee upon the subject of free passes in other respects be accepted.

April 14, 1857.—*Voted*, That the president and superintendent be authorized to give free tickets or free passes, at their discretion, to such persons travelling between Boston and New York, as they may deem expedient, not interfering with the agreements in force with the other lines upon this subject."

In addition to the very considerable latitude given by the above votes of your directors, we find that large numbers of free passes are granted over this road, by the agent of the Stonington steamers in New York; for example, (fifty in the month of August last,) and that such passes are recognized by the officers of this road. Your committee would recommend the adoption of the following resolution :—

Voted, That no persons except the officers of the road, employees when on business of the road, and objects of charity, be passed free after March 1st, 1858, provided the stockholders of the Boston and Worcester, and Old Colony and Fall River Railroads shall pass a similar vote at their next annual meeting.

The stock of wood on hand at India Point is altogether too large, but we do not see how it can well be decreased, under the contract for the disposal of the Virginia land, unless the corporation can sell a considerable portion of it. As there was a large loss by fire there last spring, we recommend that it be kept well covered by insurance.

The committee of 1856 recommended the sale of sundry parcels of land not wanted for the use of the road. Very little of

this has been sold, and we recommend that it be leased at auction for a term of years, after being laid out in suitable lots, if it cannot be at once sold to advantage. A portion of the vacant space at the north of the Boston depot might well be spared, and made to produce an income.

The finances of the corporation are in a favorable condition, the whole amount of its indebtedness, which is bonded, having been reduced to 239,720 dollars. These bonds are payable from 1858 to 1868, an average of 21,793 dollars per year, and as 30,000 dollars is to be reserved from the earnings annually for the payment of these bonds, the corporation will be in a condition to anticipate their payment. There is no floating debt, and on the first of November over 100,000 dollars was loaned on demand.

As this corporation will in all probability continue to have money to loan between its dividends, your committee recommend that in future no loans shall be made except under the direction of a committee of finance from the directors, and with ample collateral security of a nature that can be at once converted into money, should there be a necessity of so doing. While we have no reason to doubt the security of the present loans, the events of the past few months have shown to us all, that the notes and acceptances of both individuals and corporations could not be depended upon for prompt payment, no matter how wealthy might be the signers, or how secure ultimate payment might be.

The expenses of the road, for materials purchased, salaries, wages, &c., we do not find in excess. There appears to be a disposition on the part of the superior officers of the road to economize in these particulars, but we are doubtful whether it is not oftentimes carried to a greater extent than is for the interest of the corporation. An unwise economy is fully as bad as extravagance, and it is a general complaint that it is very difficult to get small matters of repairs, &c. attended to. If more personal supervision was given to these things by the superior officers of the road, instead of their being left too much in the charge of under-employees, we think it would be a great improvement.

The trains for the most part seem to be judiciously arranged, although we doubt the policy of running a train specially and at a high rate of speed to and from Mansfield, for the saving of a few minutes' running time to the Taunton and New Bedford passengers, leaving Mansfield only five minutes before the accommodation train from Providence, and leaving Boston half an hour after the Providence train, of very doubtful expediency—as during the winter months, at any rate, there is no difficulty in the cars being drawn by the accommodation train. This subject was spoken of by the committee of 1856, and the cost of this train to this road estimated at 6500 dollars per year. We are told by the president that it will probably be taken off, and we would recommend that it should be done.

As far as we can judge from frequent passages over the road, and from the testimony of the employees, the track, bridges and road bed are in very good condition. The depots are in pretty good order, although some little repairs are needed for the comfort of passengers in some of them. The depot building at Mansfield, at which every train over the main road stops, and which is the junction of this road with the Taunton Branch, is a disgrace to both corporations.

We are told that it is owned by the Taunton Branch Road, and that it is contemplated to build a new one upon joint account. We think it important that it should be done, and that a good and ample refreshment room should be furnished for the accommodation of passengers. We would also recommend the arrangement in the Boston depot of a good refreshment room, to which might be connected a place for the sale of newspapers and periodicals, and if offered for public competition, might produce a much larger income than is now received. The present refreshment room is hired by the superintendent at four hundred dollars per annum, and the road receives one hundred dollars per year for its newspaper privilege. The Old Colony and Fall River Road receive seven hundred dollars per annum for the refreshment room, and three hundred for its newspaper privilege. Independent of the increased income, it is a great advantage to a railroad to have good and well kept refreshment rooms in its depots. The refreshment room in

the Providence depot, as also the arrangements in the passenger and freight departments there, are good. Your committee were pleased with the appearance of the machine shops, which are convenient, with the exception of the want of proper accommodation for wood working, which is done at great disadvantage. The cars are in good condition, and the engines are kept in excellent order by the engineers and firemen under the direction of Mr. Griggs. All the employees of the corporation, as far as we have seen them, appear to be capable and faithful men, and have, without exception, been ready to give us all the information they could, which we required.

It will be recollected that in an early portion of this report we alluded to the large amount of figures and writing done personally by the superintendent, and for which he is deserving of much credit. We think, however, that if a greater portion of this part of the business was done by clerks, and his time given to passing over the road oftener, stopping at the depots, and becoming personally cognizant of the repairs and alterations necessary to increase the comfort of passengers, the corporation would be the gainer. Every one is aware that in their private business it is necessary to have a general oversight, no matter how competent or how faithful may be their employees, who will, if left to themselves, become careless and neglectful. This is a matter that has been sadly neglected here, and we hope to see a change in this respect.

Your committee cannot find that there has been any committee of directors appointed for the past two years to examine the accounts of the corporation. If the directors had paid more attention to this matter, we believe they would have been differently kept. With regard to the matter of fares, &c., they having been so lately reported upon at length, we have not deemed it necessary to give it our attention. Your committee are aware that most of the matters upon which they have reported, are, as compared with the developments which have sometimes been brought to the knowledge of stockholders by investigating committees, of small moment; but they have endeavored faithfully to discharge the trust imposed upon them, and feel that it is owing to the neglect of apparently small

matters, by the persons entrusted with the direction and care of our corporations, which has led to the immense frauds which so often startle our community.

Another matter to which we beg to call the attention of the stockholders, is the necessity of their attention and presence at the annual meetings, which always take place, in this corporation, on the second Wednesday in January. It is a very singular fact, that the mass of stockholders in corporations ignore entirely all supervision of the manner in which their property is managed, being perfectly content, if a dividend is paid, to have no knowledge of the situation of the principal.

Your committee recommend the adoption of the following resolution :—

Voted, That the annual report shall give a more full exhibit of the affairs of the corporation, contain the trial balance, and the tabular statements in detail as reported annually to the legislature ; that it be printed, and ready for circulation to the stockholders at least fifteen days before the annual meeting ; and that in future the notice of the annual meeting shall be appended to the annual report, and advertised daily, for the same period, in four of the leading newspapers in Boston, and two in Providence.

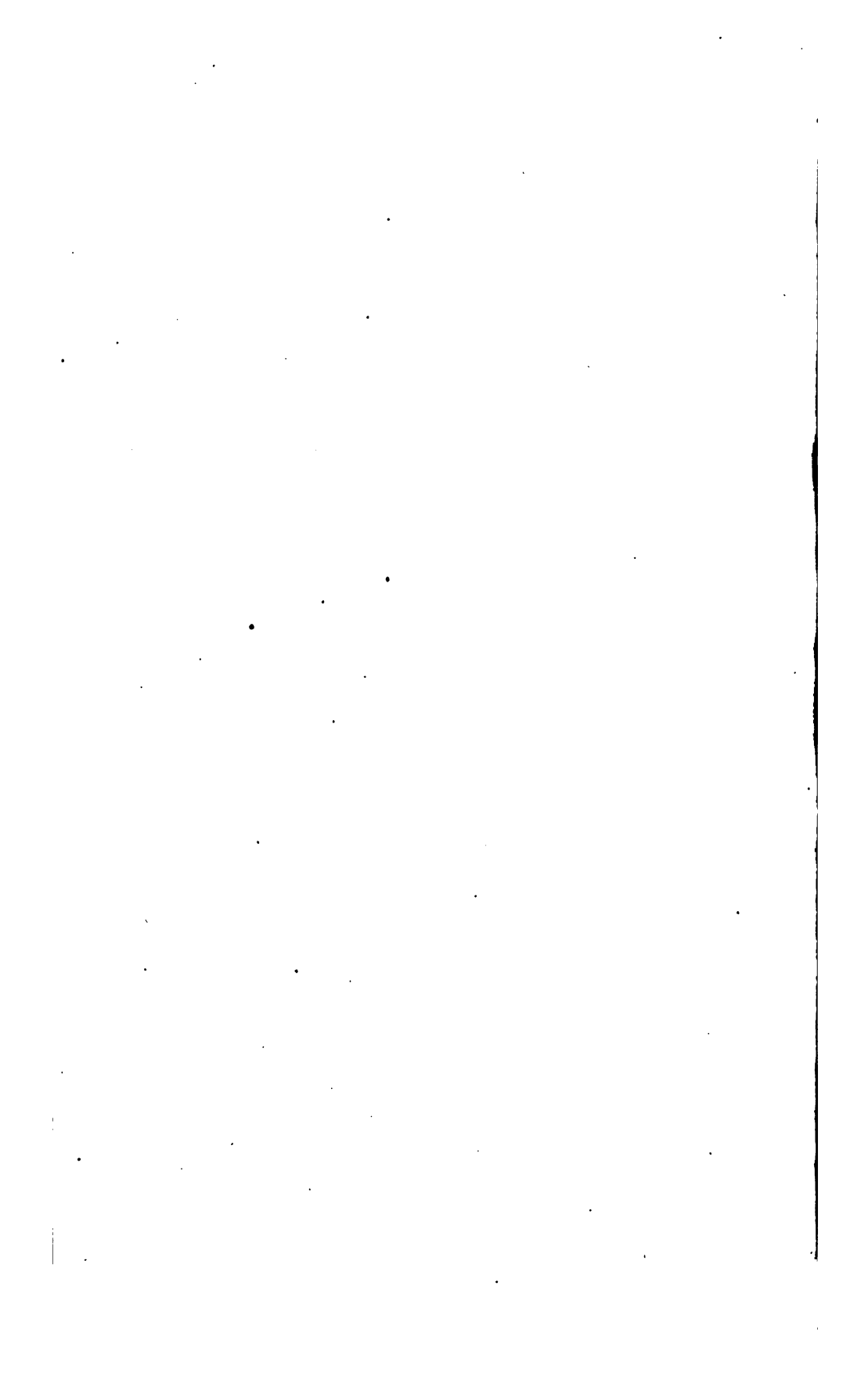
The committee desire to return their thanks to the officers of the road, for the kindness with which they have assisted them in their investigations.

FRANCIS G. BALLARD,

J. V. C. SMITH,

CHARLES A. READ.

November 30, 1857.



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REPORT

OF THE

COMMITTEE

FOR

INVESTIGATING THE AFFAIRS

OF THE

Boston and Providence Railroad

CORPORATION,

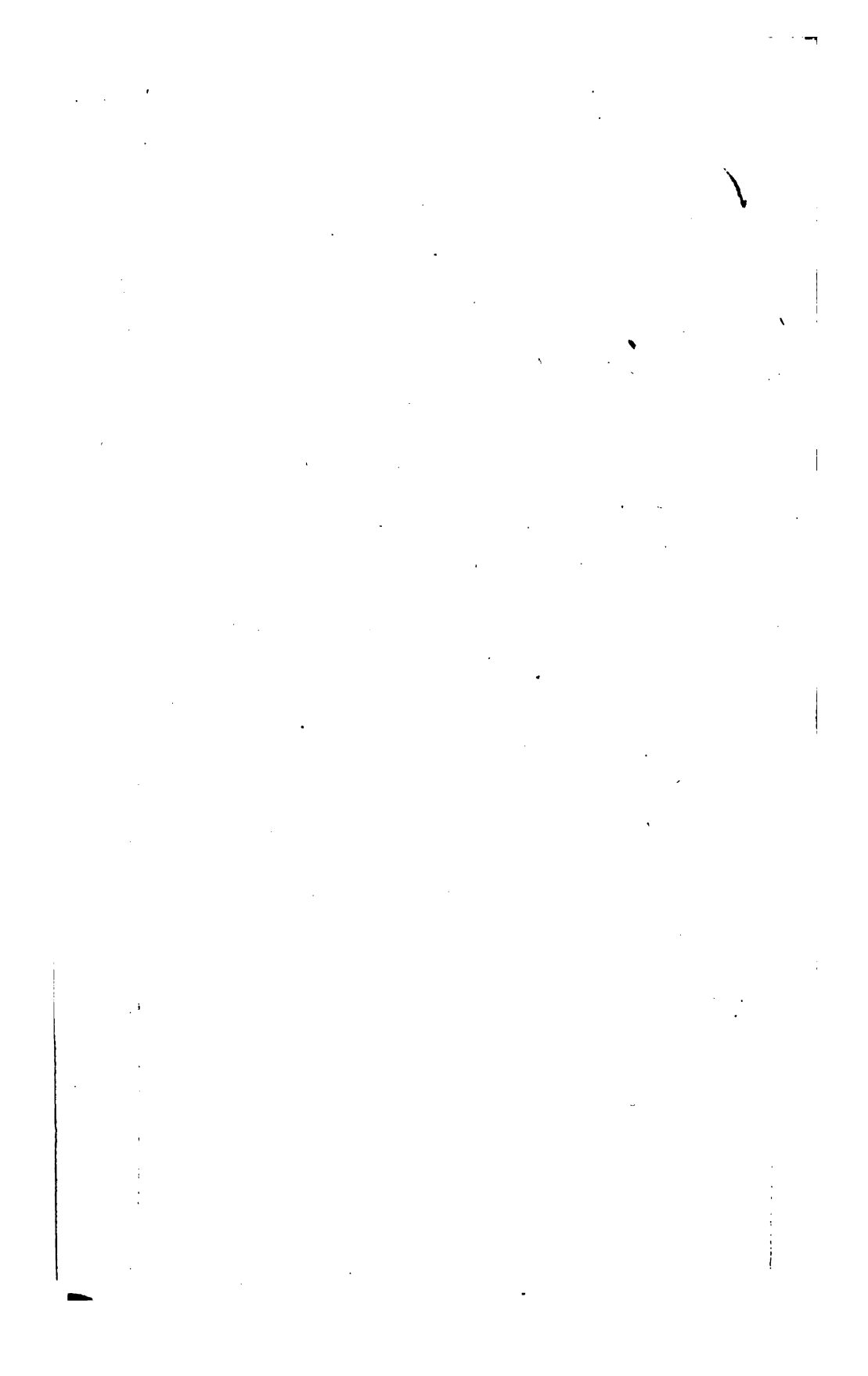
APPOINTED BY THE STOCKHOLDERS,

JANUARY 9, 1856.

BOSTON:

1856.

J. H. EASTBURN'S PRESS.



R E P O R T

OF THE

COMMITTEE

FOR

INVESTIGATING THE AFFAIRS

OF THE

Boston and Providence Railroad

C O R P O R A T I O N ,

APPOINTED BY THE STOCKHOLDERS,

JANUARY 9, 1856.



B O S T O N :

1856.

J. H. EASTBURN'S PRESS.



R E P O R T.

THE Committee appointed at the meeting of the Stockholders of the Boston and Providence Railroad Corporation, on the 9th day of January, 1856, to examine into the condition of the Corporation, especially as regards its business management, &c., and to report to the Stockholders, submit the following Report:—

The first general view of the subject, which presented itself to your Committee, was that of the present depressed condition and market value of the Stock of the Road, the absence of Dividends for the last eighteen months, and the presence of a Debt, which though not large, was still sufficient to burthen the future earnings of the road. The fact, however to be accounted for, is evident, that the road is not now in a condition so prosperous, and steadily remunerative, as the Stockholders could reasonably expect and desire. The duty of your Committee was, to ascertain if possible, the causes of this depression, and report the means of remedying it.

They are satisfied, that the cause and the remedy are principally to be found, in the inadequate compensation which the road receives for its services; and

they would express, in the strongest terms, their sense of the necessity of an immediate and essential revision of the tariff of the road.

As the want of proper compensation is most striking in the prices of the Season or Commutation passenger Tickets, the attention of the Stockholders should be first given to this part of the subject.

In the early days of railroads, it may have been desirable to attract passengers, and to form settlements on the line of the road, by giving to permanent passengers, a decided advantage in price over transient passengers; and so long as this advantage was confined to comparatively few passengers, the indirect benefit received by the road, may have counterbalanced the loss on the individuals carried. If a train usually carried one hundred passengers, and there were ten spare seats, which would not be otherwise filled, a half dozen additional passengers, carried at half price, may have been, for the time being, a not unprofitable addition; at least, so long as no increased motive power, or additional cars, or more frequent trains, were required for their accommodation. So late as the years 1848 and 1849, there were but three hundred and twenty commutation passengers in all, on the road between Boston and Dedham. But since then, the proportion between commutation and transient passengers has entirely changed; and on the short routes, such as that between Dedham and Boston, and the intervening stations, the ratio has so rapidly increased, that in the year 1854 the travel of the commutation passengers on the road from Boston to Dedham, was nearly double that of the transient passengers. It becomes therefore very material, to consider what compensation the road receives for carrying two-thirds of its passengers from Boston to Dedham; and your Committee find, that it

is less than one cent per mile ($\frac{1}{2}$ cent) for each passenger so carried. Nor is this wholly inadequate price the only evil ; it creates a gross disparity between passengers on the same route. For instance, a commutation passenger who has occasion, as not unfrequently happens, to make two trips a day between Boston and Dedham, pays for each passage about four cents, while his fellow passenger, perhaps on the same seat, pays for his passage twenty-five cents ; so a passenger from Jamaica Plain passing twice over the road, pays about two cents per trip, while his fellow passenger beside him pays ten cents ; and the only excuse for the two cents and four cents passengers is that they go so often ; and this too, while the road would be scarcely compensated by the full fare of twenty-five cents and ten cents from every passenger, commutation or otherwise. Now the cost of carrying this commutation passenger, who pays but $\frac{1}{2}$ of a cent per mile on one trip a day, cannot, according to the best opinion we can form, be less, all things included, than one cent and three-quarters per mile ; consequently there is no profit, but daily and material loss on every passenger so carried ; and no indirect benefit to the road by attraction of transient travel, or occasional absence, or omission of trips by the commutation passengers, can compensate for such loss. The principle of the system seems to your Committee unsound, the extent to which it is carried unreasonable, and the further continuance of it, at its present rates, would be most injurious to the prosperity of the road, and unjust to the other passengers. We should recommend its entire abolition, if so great a change in the public policy of the road could be suddenly effected. But the system has now been in use for many years ; the permanent passengers on the road are accustomed to its great benefits ; and

the breaking up of the system must of necessity be gradual. We do however recommend, that the change be immediately commenced, and that the price of all season tickets issued on the road for the next year, be at least made equal to the cost of transporting the passenger one trip every day, in and out to his station. Your Committee have not been able to determine this cost with precise accuracy, but are confident that an advance of fifty per cent. on the present rates, would be under, rather than over their cost, and they recommend that an advance not less than that be made, and that as far as practicable, the price be equal in its proportions to the distances of the several stations.

A change so just and reasonable in itself, and so necessary to the efficient use and management of the road, should not meet with any material objection from the passengers, and would certainly meet with none from those passengers who took the pains to inquire into the reason and necessity of the change. Among the constant passengers on the road, there are few so deficient in self respect, or a sense of justice, as to require that one class of their fellow citizens should furnish them with any of the essential conveniences of life for an inadequate compensation; and it cannot be supposed that any inhabitant of Dedham or West Roxbury, would knowingly put his hand into the pocket of his fellow passenger, simply because he was a Stockholder in the road, for the money to pay his fare. The good sense and deliberate conscience of our people, would ensure the safety of putting this matter on its true basis. Nor do your Committee consider that the rise of fare would determine the amount of travel. The expense of railroad fares, to commutation ticket-holders is, after all, a small item compared with that of house-rent, provisions, fuel, &c., and the

expenditure of twenty dollars, more or less, per annum, for railroad fare, would not of itself determine the choice of a residence, especially so long as the system prevails of taking school children, under seventeen years of age, for half price, as commutation passengers, a custom with which your Committee do not propose to interfere.

It is urged, in favor of this system of commutation tickets, that much trouble and inconvenience is saved to the road by it, and especially that it is an advantage to receive the fare in gross. But your Committee doubt if the system has even this recommendation. It complicates the accounts and calculations of the road, requires additional clerk labor in the office, imposes a difficult and troublesome duty on the conductors, and, above all, opens a wide door for imposition on the road. There are some seven or eight hundred commutation passengers, passing almost daily over the road, who, after their first few trips, expect their countenances will be their vouchers to the conductors; and it has heretofore proved difficult to keep an accurate supervision of the tickets of all these passengers.

The Committee are satisfied that this rise of fifty per cent. does not do justice to the Stockholders, inasmuch as passengers will still be carried at less than the cost to the road; but there are various considerations, which will occur to the Stockholders, why a system of dealing with the public, which has subsisted for so many years, should, although entirely erroneous, be gradually, and not suddenly, abolished.

But the system of commutation tickets, although it is the most striking example of the inadequate compensation received by the road, is not the most important in its effects on the general income of the road. To obtain an income from the road adequate and just,

compared with its service, it is necessary that a material advance be made in the price of all transient passenger tickets, and in the tariff for the transportation of freight.

For more than ten years, no change or advance has been made by this road on the price of its transient passenger tickets. The fares are the same, now, that they were in 1846. But, in the mean time, no such equality has existed in the cost of working the road, or in the amount of capital requisite to furnish accommodation to the public travel. Since 1846, there has been a necessity, over which the most vigilant economy had little control, of increasing the annual expenditure for working the road, and of late years this increase has been, of itself, almost sufficient to explain the present depressed condition of the road, and absence of dividends. In 1846, the expenses of running the road were forty-seven per cent. of the gross income. In 1855, the expenses of running the road were seventy per cent. (69 $\frac{1}{2}$) of the gross income. So that these expenses during the last ten years have increased about fifty per cent. on the cost of them ten years ago, or on the cost of 1846.

That the cost of working the road has been greatly enhanced, should surprise no one who considers how rapid has been the rise of the prices, within a few years past, of every want and necessity of life; and this general rise of prices has been especially marked in wood and oil, the two great articles of consumption by railroads, and in the cost of labor and service of men, another great element of their cost.

The difficulty does not end here; the public have required, and in some cases indirectly compelled by the power of the Legislature, but at the expense of the Stockholders, the greatest extension of railroad accom-

modation and convenience; and the expenditure of increased capital has been the consequence, and interest on this increased capital must be provided for from the earnings of the road. Thus while the proportion of yearly expense to yearly receipts has gone on increasing, there has been a corresponding increase, from year to year, of the capital or amount charged to the cost of the road, on which dividends and interest were to be paid. So that, notwithstanding the great increase of the business of the road, the net earnings for the last ten years have not materially increased, while the capital, on which dividends had to be made, has increased one-third. The inevitable result of this system is a debt, and until the fares are raised, either dividends must be omitted, or the debt must go on increasing. The custom of looking at the increasing number of passengers carried, and the greater number of tons of freight transported, as decisive evidence of the growing prosperity of the road, has tended to mislead Stockholders. It is now evident that increase of passengers and increase of freight by no means insure increase of net earnings; indeed, at the present rate of compensation, the very reverse may be the case; and there is reason to believe that it is the case, in relation to some part of the freight carried on this road; for, on looking back to the ten years during which the net increase has remained nearly stationary, the freight business has doubled in amount, while the passenger business has increased but one-half; that is, for every two tons of freight carried in 1846, the road now carries four; and for every two passengers carried in 1846, the road now carries three; while the net income from the business remains about the same. The road consequently loses more in proportion on freight, at the present rates, than on passengers; and it is necessary that a larger pro-

portionate advance be made in the price of freight than in that of passengers. The cost of carrying freight and carrying passengers is not separated on this, or on any other road, so far as your Committee are informed, and therefore the relative deficiency in these two classes of business cannot be accurately ascertained, but your Committee recommend that in all cases, where the road is not restrained by contracts, the prices of freight be materially advanced. The rates and classes of freight are so various, that it is impossible to recommend a specific advance, and we can therefore only recommend a decided general advance, the amount and details of which must be left to the Directors.

As regards the price of transient passenger tickets, considering that the cost of carrying passengers will probably increase in future years, we recommend that an advance of twenty per cent. be made in the price of all transient passenger tickets, and that, as far as possible, the price be in proportion to the distances of the several stations.

Your Committee do not recommend this advance unadvisedly, or without maturely considering the various objections which have been heretofore made against the rise of fares. But if passengers do not object, certainly no one else can, and there are evidently now in the public mind much more just notions of the yearly cost of railroads, and a willingness to allow to Stockholders fair remuneration for the use of their property.

The public prejudice, if there is any, against a rise of fares, has its origin in the fear of imposition, much more than in any unwillingness to pay the money, and in the inequality occasioned by commutation passengers and free tickets. The erroneous impression that railroads have been or are earning large profits, adds to this objection to increased prices. But our people are

willing and able to pay for what they want, and the cheapest thing in life that we pay for now, compared with its value, even if the price should be doubled, is railroad fares. If it should be shown, by experience, that four cents a mile was necessary compensation, and the public were satisfied that this was the case, the public would pay it, and eventually without complaint.

Your Committee take this occasion to state what are some of the classes of persons at whose expense the public are now carried over this road, and whose income is cut off by the present system. More than one quarter of the Stockholders in this road are guardians of minors, trustees holding property for the benefit of widows and children, benevolent, literary, and other similar institutions and companies, whose funds are held in pledge for public benefit. It is not of such classes of persons that our public would desire, knowingly, to take advantage; but they are now receiving such advantage, and will of necessity continue to receive such advantage, until the fares are raised.

In recommending the raising of fares on the road, your Committee include the fares of passengers passing over the Main road, to and from the Branch roads. These passengers have been hitherto carried at a less rate than other passengers on the Main road. There is in this an obvious hardship to the Main road, and it is unreasonable that the Main road should be laid under contribution to support the Branch roads. There is a dangerous fallacy in the theory, that the Main road, when doing its own business, can afford to do additional business for the Branch roads at a diminished price. The true principle, your Committee believe to be, that of making every passenger on the road, whatever be his destination, pay an equal and proportionate rate of fare. If a Branch road has brought a

passenger to Providence or Mansfield, who wants to go to Boston, why should the Main road take him at a less price than the other passengers, who paying full fare, still pay no more than reasonable profit? If there are a few such passengers, they are not worth making a sacrifice for; if they are many, the road falls into the admitted evils of the commutation system. By seeking and encouraging such travel, the road has added to the evil of inadequate compensation. Your Committee know, that on almost all the Main roads out of Boston, passengers to and from the Branch roads, pay less than the passengers on the Main road; but the great injustice and hardship of the system is now universally felt, and should be remedied, though it may be difficult to do so at once, on account of the contracts existing between the Main Road and the Branch Roads. There are five Branch, or connecting roads, entering on the Main Road, besides the Dedham Branch, which is the property of the Main Road, and two lines of steamboats connecting with the road. With four of these roads we have written contracts, now outstanding. Our relation with the Taunton and New Bedford Railroad is based on an old contract which has expired. Two of these roads, the Providence, Hartford and Fishkill, and the Providence and Bristol, have but recently been built and opened into the Providence Road; and the Norfolk County Road has but lately renewed the use of the track of the Providence Road to enter into Boston. The Stoughton, of which the Boston and Providence Road owns nearly half the stock, and the Taunton, are old branches. The Boston and Providence Road aided the Providence, Hartford and Fishkill Road, by subscribing for 900 shares of the stock, which subscription has been paid in instalments since November, 1851. The Fishkill Road hire a part of

the depot of the Boston and Providence Road in Providence, at a rent of three thousand dollars per annum, and this rent is the only direct return the Boston and Providence Road gets for this investment of \$90,000. The road extends from Providence to Hartford, but has not yet been opened long enough to determine, what amount of indirect benefit we may receive, by increase of business on our own road. The Providence Road receives its regular fare on all way passengers, to and from that road. Since the road has been opened to Hartford, there have been 355 through passengers from Hartford to Boston, and from each of these we have received as their fare from Providence to Boston, \$1.10 $\frac{1}{4}$. Our contract with this road extends for ten years from its opening, which was in 1854.

The Bristol Road, extending from Providence to Bristol, is fourteen miles long, and was opened in July last. The Providence Road, by a contract extending for ten years, supplies the equipment and runs the road, and the Bristol Road pays the bills. The value of this equipment is about \$12,000. Since the road has been opened, there has been some increase of passengers on our road from it; but for their accommodation we are obliged, for the summer half of the year, to run a train from the East Junction to India Point, twice a day, making in all 32 miles, at a cost of about \$20 a day. The passengers, coming over the Bristol Branch, are principally those who formerly came to Providence by stage or by the steamboats, from Bristol and Newport. The Newport passengers pay the Providence Road 86 cents, as the fare from Boston to Providence; the other passengers, \$1.09; the regular fare is \$1.25.

The Norfolk County Railroad enters the Main Road from Dedham, over the new Dedham Branch; and it

was partly for the accommodation of the Norfolk County Railroad, and partly to secure the Dedham travel, that the new Branch to Dedham, from the Toll-Gate Station, a distance of $5\frac{1}{2}$ miles, was built, at a cost of \$400,000. The Norfolk County Railroad, now in the hands of the Trustees of the Bondholders, has been running but a few months over the Providence Road, and what amount of benefit the Providence Road may get from this Branch, cannot yet be accurately ascertained.

With the Taunton Branch, your Committee are informed, there is now no written contract outstanding, the present arrangement being a modification of an old one. The Taunton Branch enters the Providence Road at Mansfield, which is 24 miles from Boston; the Branch Road furnishes and mans the cars for its passengers and freight over the Main Road, provides for the loading and unloading of the freight in Boston, a conductor for the passenger train, and a ticket clerk in Boston. The Providence Road furnishes the locomotive power, and the station and freight house premises in Boston. No account is kept by the Providence Road, of the business done by the Taunton Road over the Main Road, other than what the Branch Road furnishes them. The Branch Road keeps all the accounts and furnishes the conductor, and pays monthly to the Providence Road their proportion. The amount received by the Boston and Providence Road, for this service and use of their road, is $37\frac{1}{2}$ cents for each passenger from Mansfield to Boston, and 25 cents for each passenger from Mansfield to Providence; for freight from Mansfield to Boston, 55 cents per ton, and from Mansfield to Providence per ton. Among the items of freight, oil is a large one, and it is agreed that seven barrels shall constitute a ton. The Taunton Branch is by far the most important Branch of the

Main Road, and the arrangement with this branch is not a satisfactory one, and your Committee recommend that it be revised and amended, and that more just terms be insisted upon by the Providence Road; and they think it proper that the Providence Road keep its own account of the business done on its Road by the Branch Road.

The Stoughton Branch, which is four miles long, joins the Main Road at Canton. Canton, by the Main Road, is 14 miles from Boston. The Boston and Providence Road works the Branch Road, receiving therefor a fixed compensation, determined by the estimated cost of working the road. Of the compensation for freight, carried between Boston and any point on the Branch Road beyond South Canton, the Providence Road receives 56 per cent., and 70 per cent. of the freight between Boston and South Canton, as its share, the Branch Road taking the balance. The price of freight from Providence to South Canton is at less proportionate rates, owing to the better facilities at India Point for receiving the freight, and the longer distance over which it is carried.

The transient passenger fare from Boston to Stoughton is 50 cents. Of this sum, the Providence Road gets 28 cents for its 14 miles, and the Branch Road 22 cents for its four miles. Between South Canton and Boston, the fare is 40 cents; of which sum the Providence Road gets 30 cents for its 14 miles, and the Branch Road gets 10 cents for its 3-4 of a mile, South Canton being 3-4 of a mile from the Main Road at Canton. For all passenger business between Canton and Providence, done in connection with the Branch Road, the Main Road receives the local fare. But commutation passengers, between Boston and Stoughton, pay in the same ratio as the transient passengers, as far as re-

gards the Main Road. So that a Stoughton commutation passenger pays between Boston and Canton, a distance of 14 miles, \$28 per annum; while a commutation passenger on the Main Road, between the Toll-Gate Station and Boston, a distance of $4\frac{1}{4}$ miles, pays \$27⁵⁰/₁₀₀ per annum, or only 50 cents less, for about a third of the distance. The contract with the Stoughton Road extends only to July next.

By contract with the propeller steamboats, from Providence to New York, the Providence Road receives two-fifths of the through charge for freight, and the steamboats three-fifths.

By contract with the steamboats from Stonington to New York, the Providence Road receives one quarter of the through charge for freight. By this contract, the Worcester and Norwich, and the Old Colony and Fall River Roads, are restricted to the same charge for through freight; but your Committee do not know in what proportion this is divided between the steamboats and those roads.

There are also special contracts for carrying freight, with the Hensley Machine Company and the Revere Copper Company, O. Ames & Son, and Gardner Chilson. These contracts are based upon rates below the present low general tariff of the road, and from the yearly increasing cost of carrying freight on the road, those of long continuance are adverse to the interests of the road. It would be better policy to make all customers of the road stand alike.

Two of the Branch Roads, the Fishkill, by the subscription for 900 shares, and the Norfolk County Railroad, by the new Dedham Branch, have cost, as we have seen, the Providence Road about half a million of dollars. We work the Bristol Road for them, and furnish them the track to Fox's Point, which is however used

by the Main Road to carry freight to the propeller steamboats, and we work the Norfolk County Road. We also subscribed for 400 shares in the Stoughton, and we have always carried passengers to and from these Branch Roads, at a less rate than passengers on our own roads. The Boston and Providence Road ought not therefore to be called upon, directly or indirectly, to contribute to their further maintenance. Each Road should maintain itself, on its own independent resources, the Main Road giving every facility and accommodation, not involving pecuniary sacrifice. We cannot now afford to do more. The most favorable relation in which we stand to any of these roads, is that of a pro rata compensation, according to the number of miles travelled by each passenger on the two roads. But even this arrangement involves a co-partnership relation between the two roads, as to the rate of fares. Any increase of fare, to be justly divided, has to be made on both roads. If the Providence Road alone increases its fare, on its branch passengers or freight, it gets, of course, but a partial corresponding benefit. In those cases, as in the Stoughton, and Taunton Road, in which the Main Road receives a fixed compensation, it is at present rates inadequate. The true principle, your Committee believe to be that of having but one tariff on the Main Road, and if this could be established, a very material addition would be made from this cause alone to the income of the Road; and if it cannot be effected otherwise, it would be better to rely on the justice and equity of Referees, to be appointed under the provisions of the statute.

Before leaving this subject of passengers, your Committee have a recommendation to make in relation to free tickets. Numbers of persons pass free over railroads, by loose general custom, which the officers can-

not well control. Besides those known, and returned to the Superintendent on this road, which amount to about three thousand passages a year, it is evident, from some little inquiry among the conductors, that others not returned also pass over the road, swelling the amount materially. The evil from this is two-fold. It not only occasions an actual loss to the Road, but creates dissatisfaction and suspicion in the minds of the other passengers, and diminishes the habit of strict accountability in the subordinate officers of the road. Your Committee therefore recommend that no persons but the officers of the Main Road, those persons who by contract have a right to a free pass, and persons in the employ of the road, making the specific trip for the business of the road, be permitted to go free, and that all other persons going over the road pay their fares.

For the purpose of forming a more correct opinion of the financial condition and prospects of the road, the Committee have caused a tabular statement to be prepared, as a part of their report, exhibiting the more important accounts of the Treasurer's department, and the result of the business of the road for the last eleven years. The most prominent account is that for construction. During this period the Construction Account [see Table on opposite page] has increased from two millions to over three and a half millions of Dollars. The capital stock has been increased to \$3,160,000, and the difference between the two constitutes substantially the bonded and floating debt, which is mentioned hereafter. It is very important to know whether the Construction Account is to go on annually increasing; that is, whether we are to be further adding to the capital invested in the road, thereby diminishing our dividends, or swelling our debt.

Comparative Statement, Capital Stock, Construction, Debts Payable, &c., for Eleven Years.

Year.	Capital Stock represented by Shares.	Construction Acc't.	Yearly Increase of Construction Acc't.	Debts Payable.	Personal Property applicable to payment of Debts.	Ratio of Expenses to Receipts.
January 1, 1846	\$ 1,960,000	\$ 2,004,677.16	\$ 118,542.58	\$ 6,657.88	* \$ 134,123.99	47
" " 1847	2,160,000	2,286,615.27	281,938.11	7,129.57	100,653.12	48.3
" " 1848	2,520,000	2,663,185.34	376,570.07	127,233.38	115,531.04	51.7
" " 1849	2,893,300	3,033,106.72	369,921.38	236,694.05	do.	48
" " 1850	3,160,000	3,370,269.98	337,163.26	326,249.44	do.	46.2
" " 1851	3,160,000	3,415,705.31	45,435.33	377,720.15	do.	51
" " 1852	3,160,000	3,421,830.61	6,125.30	396,386.69	91,108.50	55.3
Dec. 1, 1852	3,160,000	3,443,203.89	21,373.28	481,144.73	108,312.02	55.4
" " 1853	3,160,000	3,486,041.41	42,837.52	438,714.12	95,239.35	66
" " 1854	3,160,000	3,521,821.65	35,780.24	470,627.54	49,000.34	69.6
" " 1855	3,160,000	3,577,154.31	55,332.66	403,902.13	49,909.37	
* Items from Balance Sheets, yearly.						
400 Shares Stoughton, do.— 900 Shares Hartford, Providence, and Fitchburg R.R. not included.						
400 Shares Stoughton Branch Railroad Stock not included.						
Year.	Receipts from Passengers.	Receipts from Freight.	Receipts from Sundries.	Total Receipts.	Total Expenses, including Interest on Bonds.	Ratio of Expenses to Receipts.
1846	\$ 230,486.27	\$ 110,882.43	\$ 19,506.33	\$ 360,875.03	\$ 169,679.48	47
1847	226,103.19	118,172.79	19,052.99	363,328.27	175,345.74	48.3
1848	231,282.66	112,187.85	10,921.92	354,375.43	183,361.81	51.7
1849	225,639.85	119,441.91	9,249.84	354,331.60	169,905.38	48
1850	232,321.50	127,704.61	10,701.15	370,727.26	171,305.26	46.2
1851	236,729.99	133,421.92	7,244.66	377,396.57	192,311.17	51
1852	236,432.68	135,029.37	18,032.29	429,484.34	237,438.92	55.3
1853	299,990.75	190,647.21	17,688.63	508,326.59	281,687.12	55.4
1854	316,100.35	214,594.17	14,135.33	544,829.85	359,283.77	66
1855	316,434.00	225,823.35	16,413.90	558,671.25	386,961.12	69.6

* Items from Balance Sheets, yearly.

H. DALTON, Treasurer.

To avoid further increase of this account as far as possible, the Committee recommend that the Construction Account be now closed, and that every thing be charged to Expense Account, and deducted from the annual earnings of the road ; and that no new Construction Account be opened, unless by direction of the Stockholders at their annual meeting. Owing to the season of the year, and the limited time allowed them, the Committee have been unable to examine the condition of the Road-Bed, Depots, Bridges, &c., and can make no report upon them ; but they are said to be in a fair state of repair, and the equipment, compared with most other roads, to be equal to the present wants and means of the road. It is hoped, therefore, that for some time to come, no further addition will be necessary to the Construction Account of the road. To meet, however, the constant depreciation of the superstructure and equipment of the road, much more importance should be given to the Depreciation Account. The want of due attention to this has inflicted in other roads most serious loss on Stockholders. It was formerly supposed that railroads, and even their equipments, had the durability of real estate, and that once provided and paid for, there was an end to that expense. But later experience has shown that railroads consist of two classes of property : the land, buildings and road-bed, which have the permanency of real estate ; and the equipment and superstructure, which, like ships, or other similar property, perish rapidly in the use. This depreciation or waste is at least ten per cent. per annum, and estimating the equipment and superstructure of the road at \$500,000, it requires \$50,000 a year to be either expended, or set apart to supply this waste, independent of and beyond the expense of ordinary daily repairs. It is immaterial whether it be necessary or not in any one year, to ex-

pend this sum to keep good the equipment or superstructure ; for what is omitted in one year, must be done in after years ; and therefore this sum must be either expended out of the income, or set apart as a fund, not existing in accounts or figures, but in tangible available investments. Mr. Lee, the late Superintendent, and Mr. Nason, the present Superintendent, concur in this estimate of annual depreciation, the former estimating it at \$49,000, and the latter, at about \$50,000 per annum ; and in fact, upon the Main Road, about four miles of new rail have, for the last few years, been annually required. If the sum of \$50,000 above mentioned is annually expended or set apart out of the income, the Road will maintain its permanent value, and the capital be undiminished ; without it, the capital must be diminished, and debt incurred to renew it. This rapid depreciation of the property, which could not of course be certainly ascertained, until railroads had been a long time in operation, and which has hitherto not been sufficiently allowed for, is a conclusive argument for increased fares.

Although in speaking of a road with a debt, it may be premature to say anything of a reserved or contingent fund, separate from and independent of the depreciation fund, yet the Committee have been too much struck with the difference of policy between railroads and other corporations in this particular, not to remark upon it. While all well conducted Banks, Manufacturing Companies, Insurance Offices, &c., have reserved and laid up from their income, a contingent fund, for protection against the casualties and fluctuations of business, Railroad Companies, so much more liable to these calamities and treading such new paths, have rarely done so. That they have not done so, is

a proof, and to some extent, the explanation of their want of success. That such a provision should not be a part of their settled policy, and that when they found themselves unable to make such a provision, they should not have perceived that their business could not be steadily and surely remunerative, is somewhat singular. A collision, a default, a fire, a weak abutment, or a broken rail, may at any time, as has been the case in instances familiar to all of us, take fifty or a hundred thousand dollars out of the funds of a road. To make this road, with its capital of over three millions of dollars, supposing it to receive proper compensation, a 7 per cent. stock, there ought to be a reserve fund of \$200,000. With such a fund, and a proper depreciation fund, we could restrict the net earnings of the road to 7 per cent., reducing the fares again if more than that is earned. But until such funds are laid up, and 7 per cent. annual dividend can be paid out of the earnings, we hope to see the fares raised, not only now, but hereafter.

In general confirmation of the foregoing views on the subject of the general condition of the road, and the policy to be pursued to improve it, the Committee refer the Stockholders to some tabular statements annexed to this report. In the course of making up their report, the Committee were accidentally informed that Mr. G. Forrister Barstow, Civil Engineer, lately in the employ of the Hartford and Fishkill road, had prepared some abstracts from the returns to the legislature, of the six principal roads out of Boston, for his own information and use. By his kindness we were permitted to examine them, and finding them of great interest and value to the Stockholders, we requested, and obtained from him permission to subjoin three of

these abstracts to this report. The first table exhibits the cost of every passenger, and every ton of freight carried one mile on this road, for each of the nine years prior to 1855.

The second table exhibits the average cost of each passenger, and each ton of freight, carried one mile, and the profit received thereon, during the same period on the six roads leading out of Boston.

The third table shows the amount which it would be necessary to receive on each passenger or ton of freight, per mile, over and above the cost of carrying each passenger or ton of freight, in order to give 6 per cent. on the capital invested.

These tables, which ought to be reliable as they are compiled from returns verified by the oaths of the officers of the several roads, furnish the truest picture that could be drawn of the results and tendencies of the past policy of the railroads out of Boston. Mr. Barstow has other tables of great interest relating to other roads, which we hope will be made public, as it is only on such statistics that a safe and reliable policy can be established, and theory abandoned. Mr. Barstow suggests that, in these returns, the element of depreciation must be but imperfectly included. Similar tables may have been prepared and in use among men professionally devoted to the study of railroads, but the Committee believe they have not been made public or generally accessible to Stockholders, who are interested mainly in the commercial and pecuniary policy and results of railroads.

The Committee find the debt of the Corporation now amounts to \$403,902.13, of which \$80,000 is in Bonds falling due in January, 1861, and \$103,000 is in Bonds falling due in January, 1862, and the balance, \$220,902.13 is floating debt.

The assets of the Company are as follows :—

900 shares Fishkill Railroad	-	-	-	-	-	
400 " Stoughton Branch Railroad,	-	-	-	-	-	
Cash on hand,	-	-	-	-	-	14,094.14
Debts receivable, (good)	-	-	-	-	-	35,815.83
Wood, Stock in Machine Shops, &c.,	-	-	-	-	-	88,976.50
Land in Virginia charged at	-	-	-	33,358.33		45,639.72
F. B. Cobb, agent for do, am't charg'd him,	-	-	-	11,025.49		
Store kept on Virginia Land,	-	-	-	1,255.90		
						\$184,526.19

The Virginia Land was purchased for the Corporation, in November, 1853. It comprises 1753½ acres, which cost \$13,500. An agent, Mr. F. B. Cobb, has been employed on this land for the last two years, in superintending the cutting and shipping of wood. A saw mill and railroad track have been built, and scows or lighters have been purchased for the shipping of the wood; a store has also been opened on the land, and many hands apparently employed there. A considerable amount of wood is reported to have been cut and to be ready for shipment, but your Committee have been unable to ascertain what will be the cost per cord of the wood obtained there. The Committee consider it very inexpedient and hazardous to invest the funds of the Corporation, at so great a distance and in so doubtful an enterprize. It is impossible that the Corporation can profitably at that distance employ an agent, at a salary of \$1200 a year, to compete with individual enterprize, in supplying such an article as wood in an open market. They recommend that steps be taken to sell the land, and dispose of all the property there, and close up the concern. The Corporation also own several parcels of Real Estate, situate in Boston, Roxbury, Dedham, Canton, and Pawtucket, which have been charged to construction account, and are still re-

tained in that account. These are stated to be worth some \$50,000, and are not needed for the use of the road. The Committee recommend that these also be sold, and that purchasers be permitted to pay for them in the stock of the road taken at par.

Of the above assets of the Corporation, about \$89,000 consists of wood and materials for the use of the road. In estimating the condition and disposition to be made of the debt, this sum should properly be excluded. It is in fact the floating capital, necessary for the working of the road, and could not be materially lessened. The business of so large a Corporation, constantly requires a floating capital for its proper conduct, and if the sum were even larger, the borrowing of money might be more avoided. A successful road, should be in the condition to lend money between dividend days, and certainly not a borrower near those days.

The Committee have endeavored to ascertain, if any addition can be made to the net income of the road, by greater economy in the conduct of any of its business; and there is one plan for reducing the cost of working the road, which the Committee take the liberty of recommending to the consideration of the Directors and Stockholders.

As soon as the severe frost of autumn has set in, the road-bed is more or less deranged by it. The track becomes uneven, the sleepers are disturbed by the alternate freezing and thawing of the ground, the rails get out of level, and the joints imperfect. As winter advances, these defects in the track become as fixed as if the road had been converted into cast iron, and the re-adjustment of the track becomes often impossible until the following spring. The cars and engines no longer roll over a smooth road, but are jumped and tossed from one inequality to another, severely jar-

ring all the machinery of the train, and rapidly destroying the rail. The machinery and moving gear, made brittle by the frost, are subject to constant fracture, and much more fuel is needed to keep up steam, and to furnish the increased power necessary to overcome these obstacles. The liability to accident is of course proportionally increased; trains are delayed, passengers are made anxious and disappointed, and the whole road becomes, in continued severe weather, crippled and disorganized. During the last fortnight there has been on this road a break-down on an average once a day, the machine shop has been filled with disabled engines, and all the trains more or less delayed. This occurs at a period of the year when the traffic is least, and all the running expenses are largest. To some extent these evils are inevitable, but they are greatly increased by the effort to maintain in winter, the high rate of speed of summer; in our rigorous and fickle winters it seems absurd to attempt this; it is too much like squandering money to overcome impossibilities. By reducing the rate of speed during the winter half of the year, one-fourth or even one-fifth there would be a saving to Stockholders, of perhaps twenty-five per cent., the safety and convenience of passengers would be increased, and punctuality and real despatch would be secured. The experiment has been tried on one train with marked success. We should be glad to see it extended to all the trains on the road, and that from the first of November to the first of April, a different time-table be established as the permanent rule of the road. There seem so many good reasons for the change that we think it might be effected without serious objection, and it would perhaps be the most prudent step towards effecting a general reduction of the present high rate of speed, which is an enormous tax

on the pockets of Stockholders. We therefore recommend that the Directors be authorized, if they consider these suggestions valuable, to carry them into effect. If the rule was adopted on all the roads, there would be a saving to their Stockholders of hundreds of dollars a day.*

In other ways there seems to be little hope of materially reducing the expenses of the road. The wages of station and train hands, work-shop hands, clerks, &c., are reasonable, and average the same as on other roads. The system of repairs is a judicious one. The Machine Shop is at Roxbury, a convenient and economical location and there is no shop at any other point on the road. The cost of fuel is in excess, compared with that of other roads, and attention should be given to reducing if possible this item of large cost. There are some expenses of working the road, which it seems to your Committee, might perhaps, be lessened.

The system of working two roads, the Bristol and Stoughton, at cost, entails some loss on the Main road; as in practice, estimates of cost, especially in railroad matters, fall short of the actual amount. The Main road, for the summer half of the year, has run a train 32 miles a day, from the Attleboro Junction, to and from India Point, for the accommodation of the Bristol Branch, at an expense of about \$15 a day. The Main road also runs one train, which is an express train, daily to and from Mansfield to Boston, for the accommodation of the Taunton and New Bedford Branches, a distance of 48 miles per day, and this is the only part

* Mr. George S. Griggs, for many years past, foreman of the Machine shop, states as the result of his experience, that in a severe season there is more wear and injury to the machinery, in the three winter months, than in all the rest of the year, and that a diminution of the speed of the trains would be the main remedy for it.

of the road between Boston and New Bedford, where the train runs express, and this express train provides no accommodation for passengers on the Main road. The cost of this train to the Main road is about \$6,500 a year. The Main road also runs a horse car on the old Dedham Branch, at an expense of nearly \$1000 a year, principally to carry passengers from Millville Village, through Dedham to Boston, though these passengers pay no more than if they started from Dedham.

These expenses which in the aggregate increase the cost of working the road, are results of the system of extending excessive favors to the Branch roads, at the undue sacrifice of the Main road, and as one step towards correcting that system, the Committee would ask the attention of the Directors, to their reduction.

The attention of the Committee has also been drawn to the great need of some suitable person, to be always on the platform of the station house in Boston, to attend to the wants, and answer the reasonable inquiries of passengers.

In conclusion the Committee would express their thanks to the Officers of the road, for their readiness in affording them information and facilitating their labors.

WM. MINOT, JR.,
THOMAS C. SMITH,
NATHL. WHITING.

TABLES compiled by G. Forrester Bartston, Civil Engineer, from the Legislative Returns.

NO. 1.

Table made up from Returns to the Legislature by the Boston and Providence Railroad Co., for the last Nine Years.

	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.
No. of Passengers carried 1 mile, - -	8,711,161	8,717,272	10,857,390	8,352,123	8,412,205	9,261,282	10,619,517	11,150,038	11,995,218
No. of Tons carried 1 mile, - - -	2,557,971	2,717,969	2,415,796	2,092,542	2,292,150	2,554,170	3,007,568	4,712,754	5,176,144
RUNNING EXPENSES PER MILE.*									
Maintenance of Way, - - - -	13,2044	9,8309	15,005	17,3220	10,9071	16,7821	14,187	23,0379	23,0759
Motive Power, - - - -	13,0662	10,8153	5,943	5,7734	3,5669	4,4729	7,097	8,8290	6,4310
Fuel, - - - -	20,9436	17,9151	23,580	15,8475	17,5000	17,8338	22,507	21,0386	27,4514
Miscellaneous, - - - -	18,0128	19,3226	9,772	11,1542	12,4107	11,3986	8,520	12,3959	15,2099
Total, - - - -	65,2270	57,8839	54,300	50,0971	44,3847	50,4924	52,311	60,3014	72,1682
PASSENGER DEPARTMENT.									
Salaries, etc., per mile run per Train,	15,7755	13,8165	13,433	12,8968	14,0518	14,7610	14,967	15,2170	15,9813
Repairs of Cars " "	2,7077	2,2972	3,208	2,6598	2,4544	3,7178	2,360	3,3035	6,1476
Total, - - - -	83,7102	73,9976	70,941	65,6537	61,8909	68,4712	69,638	78,8219	94,2971
FREIGHT DEPARTMENT.									
Salaries per mile run per Train, - -	26,3419	29,3829	31,006	28,4850	33,2165	27,9538	30,680	38,3662	36,3411
Repairs of Cars " "	10,2626	9,5996	10,767	5,5261	5,9991	5,5355	13,181	6,6095	9,7200
Total, - - - -	101,8315	96,6264	96,073	84,1082	82,9003	83,9817	96,172	105,2771	118,1292
Cost of carrying 1 Passenger 1 mile,	1,353	1,370	1,205	1,428	1,400	1,360	1,391	1,5874	1,7266
Cost of carrying 1 Ton 1 mile, - -	2,060	1,847	2,223	2,415	2,228	2,350	2,294	1,7378	2,4246
Receipts per Passenger per mile, - -	2,645	2,366	2,130	2,701	2,762	2,558	2,414	2,5910	2,8040
Receipts per Ton per mile, - - -	4,334	4,350	4,644	5,708	5,747	5,223	5,953	4,0453	4,1458

NOTE.—The cost of Freight and Passengers is not separated in the Accounts of the Road. The distribution of these in the above items follows, as far as possible, the Returns made by the Road to the Legislature. As far as Stockholders are interested, the general result of the two, only is important.

* The sums in tables 1 and 2, are expressed in cents and decimal parts of a cent.

NO. 2.

TABLE made up from the Returns to the Legislature by the Six Main Roads, out of Boston, for the last Nine Years.

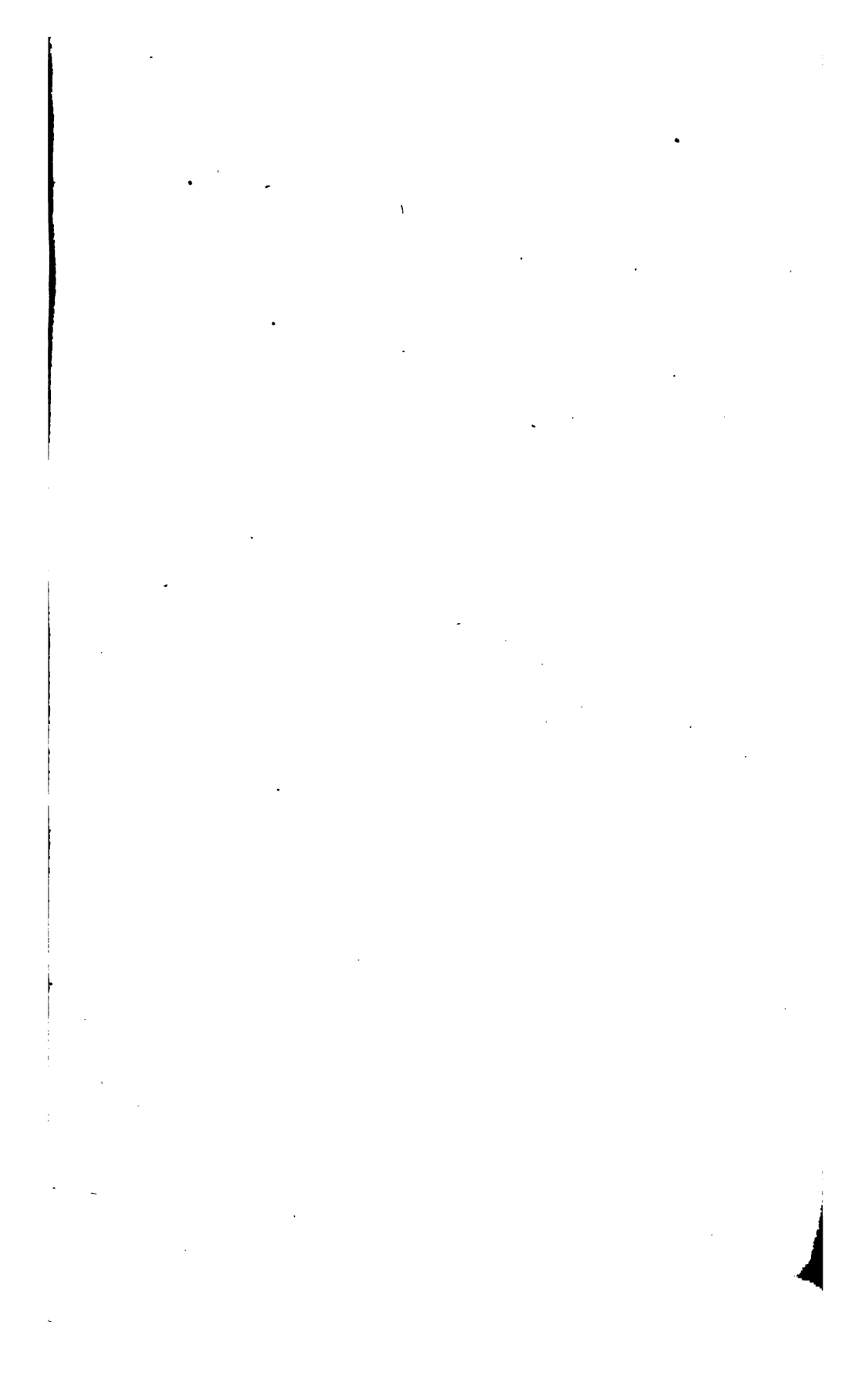
AVERAGE FOR SIX ROADS.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.
Maintenance of Way, - - -	14,8086	14,6098	14,0725	17,4663	20,9151	19,8147	17,0506	22,9779	25,582
Motive Power, - - -	8,8229	7,6329	9,0227	9,4193	7,0741	7,5500	8,2352	7,5916	9,857
Fuel, - - -	16,2968	16,9272	19,0142	17,8916	16,4110	17,5248	18,5607	19,2707	22,638
Miscellaneous, - - -	18,4016	19,4732	21,1932	18,5143	19,9479	15,9797	14,5895	18,7213	20,670
Total, - - -	57,8299	58,6431	63,3026	63,2915	64,3684	60,8692	58,4360	68,5615	78,747
Pass. Dep't, Salaries per mile, -	14,5131	13,4873	13,1674	15,5415	15,3379	15,1216	14,8393	15,5454	17,264
Repairs Cars per mile,	5,2776	5,6460	4,0594	3,8655	4,5861	5,5712	4,2628	4,7172	6,656
Total cost per mile, -	77,6206	77,7764	80,5294	82,6985	84,2924	81,5620	77,5581	88,8241	102,667
Freight, Salaries per mile, -	36,0780	33,3237	34,3987	35,8140	39,9986	39,8066	41,8755	43,9547	48,547
Repairs of Cars, -	15,3190	12,8927	9,2990	7,5697	7,7345	8,3309	9,2598	9,3288	21,261
Total cost, - - -	109,2269	104,8595	107,0003	106,6652	112,1215	109,0067	109,5713	121,8450	148,555
Cost of carrying 1 Pass. per mile,	1,3014	1,3290	1,546	1,3878	1,412	1,455	1,351	1,478	1,680
" " 1 Ton " "	1,7906	1,7223	1,981	1,8410	1,834	2,008	1,996	1,760	2,244
Receipts per Passenger per mile,	2,533	2,329	2,143	2,132	2,005	2,236	2,078	2,07	2,141
" " Ton	4,054	4,060	4,099	4,229	4,018	4,159	3,925	3,36	3,3176
Profits per Passenger " "	1,2316	1,000	0,597	0,7442	0,593	0,781	0,727	0,592	0,461
" " Ton	2,2634	2,3377	2,118	2,3880	2,184	2,151	1,929	1,600	1,0736

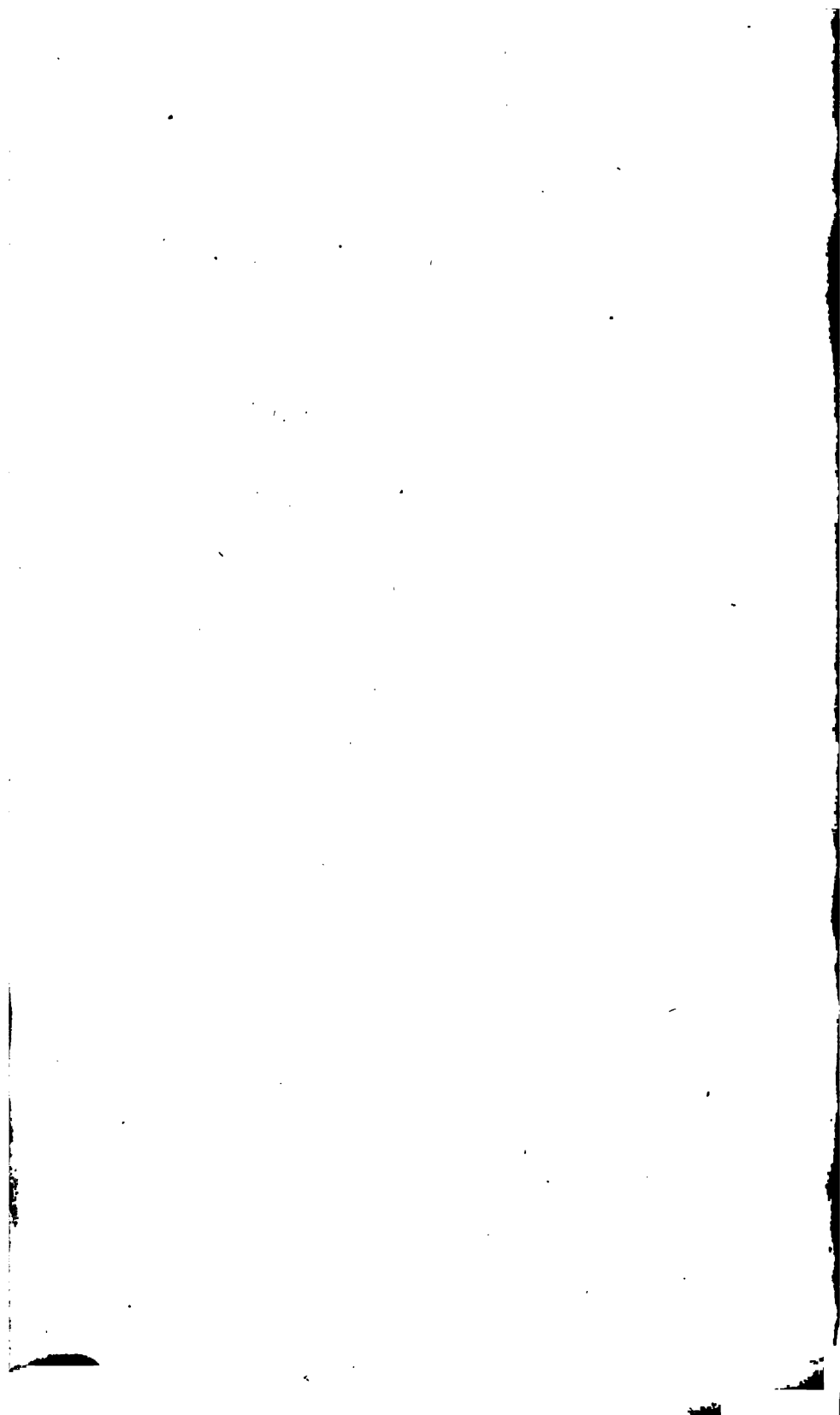
NO. 3.

CONSTRUCTION ACCOUNT, &c. of Boston and Providence Railroad, taken from the Returns to the Legislature.

Years.	Construction Account.	Annual Increase.	Six per cent. on cost.	Income from other sources.	Income to be derived from Passengers and Freight.	Necessary charge on each Passenger and 'ton of Freight per mile, over the cost of transportation to earn 6 per cent. on the Capital.
1846	\$2,109,455.36	— —	\$126,567.32	\$18,827.22	\$107,740.10	Cents 0.95
1847	2,544,715.05	\$435,259.69	152,682.90	19,052.29	133,630.61	1.16
1848	3,031,106.72	486,391.67	181,866.40	10,925.00	170,941.40	1.28
1849	3,370,269.98	339,163.26	202,216.20	9,249.84	192,966.36	1.84
1850	3,416,232.51	45,962.53	204,973.95	10,701.15	194,272.80	1.83
1851	3,469,599.98	53,366.87	208,195.96	7,244.66	200,951.30	1.69
1852	3,546,203.89	76,604.51	212,772.23	18,032.29	194,739.94	1.42
1853	3,576,041.41	29,837.52	214,562.48	17,688.63	196,873.35	1.19
1854	3,611,821.65	35,780.24	216,709.90	14,135.33	202,574.57	1.18

For the purposes of this table, Freight and Passengers are made equal; that is, one ton of freight carried a mile, is charged as equal to one passenger carried a mile.





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REPORT

OF THE

Mass
BOARD OF COMMISSIONERS,

OF

INTERNAL IMPROVEMENT

IN RELATION TO THE EXAMINATION

OF SUNDRY ROUTES FOR A RAILWAY

FROM

BOSTON TO PROVIDENCE.

WITH A

MEMOIR OF THE SURVEY.

Boston :

DUTTON & WENTWORTH.....PRINTERS TO THE STATE.

Nos. 1 & 4 Exchange-Street.

.....
1828.

Commonwealth of Massachusetts.

In Senate, Jan. 26, 1828.

ORDERED,

That one thousand copies of His Excellency's
MESSAGE, relating to a RAILWAY from Boston
to Providence, and of the accompanying Documents,
be printed for the use of the Legislature.

PAUL WILLARD, Clerk.

To His Excellency LEVI LINCOLN,

Governor of the Commonwealth of Massachusetts.

SIR,

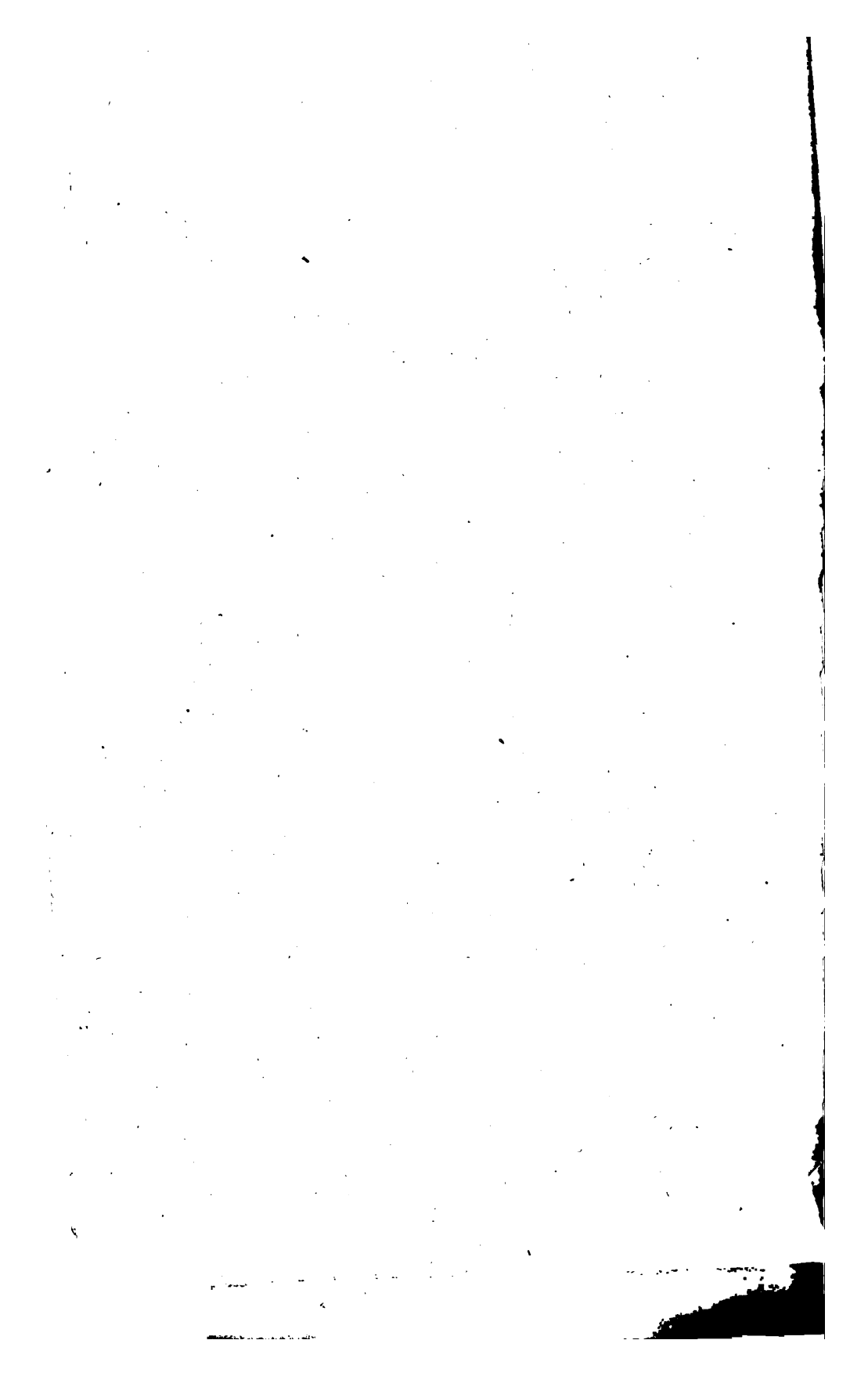
PURSUANT to a Resolve of the Legislature, passed March 2, 1827, I have the honor in behalf of the Commissioners of the Board of Internal Improvement, to transmit to your Excellency the accompanying Report, in relation to the examination of sundry routes proposed for a Railway between Boston and Providence, and also a Plan and Report of the several surveys.

With sentiments of the highest respect,

I am your most obedient Servant,

JOSIAH J. FISKE, *Chairman.*

Boston, January 24, 1828.



MESSAGE.

*Gentlemen of the Senate, and
House of Representatives.*

THE Board of Internal Improvement have just now furnished me with their Report in reference to a Railway from the city of Boston to Providence in the state of Rhode-Island, together with a Memoir of the Surveys, and a plan of the routes, by the Engineer, and an estimate of expense for the construction of the work.

The manuscripts are so voluminous as to create a claim upon your indulgence, in permitting me to transmit the originals, that without delay, they may be at the disposal of the Legislature. They will be found to present encouraging considerations to the proposed improvement.

By the Report and Survey, the following propositions appear to be established :—

That the Rail Road may be constructed, on either of two routes, designated as Eastern and Western, with little preference in the election between them,—and in length of way, not greater than the present Turnpike Road.

That the inequalities of country, through the whole distance, may be reduced, for the track of the road, to an elevation, at most, of 30 feet in a mile, except on a single short section, where it will not exceed 60 feet.

That horse power will be most expedient for application to the uses of this Road.

That the power of a single horse, working seven hours in a day, and travelling at the rate of three miles an hour, will be equal to the draft over the Road, of at least eight tons weight inclusive of the weight of the carriage, except on the section of greatest inclination, where additional power may, conveniently and with little expense, be applied. And that the same power of a single horse, working three hours a day, will convey a carriage with twenty-five passengers, at the speed of nine miles an hour.

That the best mode of constructing the Road, will be with foundation Tracks of Granite, having a flat bar of Iron secured by bolts to the upper sur-

face of the stone, on which the wheels of the Carriage are to move.

That one set of Tracks, with suitable offsets and short side Tracks, at equal distances on the road, will be sufficient for the convenient accommodation of the travel.

That the expense of constructing the Road, in the most thorough manner, with durable materials, will not exceed *eight thousand dollars* per mile, and with proper additional allowances for offsets and occasional side Tracks, the whole expense will fall short of *three hundred and fifty thousand dollars*, exclusive of the compensation which may be exacted for land taken for the use of the road, which it is suggested, will probably be inconsiderable.

That from satisfactory estimates and calculations upon the present travel and occasion of transportation, the net income of receipts from the use of the Road, after deducting all charges for keeping it in repair, carriages, &c. and upon a saving of one half in the present cost of transportation, will amount to a sum exceeding *sixty thousand dollars* per annum.

That the construction of the Road would be of great public advantage, and a profitable investment of capital.

These positions are sustained by a mass of infor-

mation, a representation of facts, calculations and deductions, and a force of argument, which will recommend the whole matter of the Report to your careful attention ; and if made public, by being printed, cannot fail to create a general interest in the subject.

I have thought proper to present this synopsis of the contents of the Report, that the results might be understood by the members of the Legislature, in anticipation of the probable opportunity which can be afforded to them individually, for examining its pages.

LEVI LINCOLN.

Council Chamber, Jan. 25, 1828.

REPORT.

*To His Excellency the Governor,
and the Honourable Council, of the Commonwealth of Massachusetts.*

THE Commissioners of the Board of Internal Improvement

REPORT:

THAT upon the organization of the Board in the latter part of July last, they found that two several services had been assigned to them by two Resolves of the Legislature, passed on the second of March last, one relating to the route of a Canal leading from Boston to the Chickope River, intersecting the Blackstone Canal and the proposed Norwich Canal; the other relating to the route of a Railway between Boston and Providence. As the remaining part of the season did not afford time for completing the examination and survey of both those routes, the Board, upon

deliberation, concluded to devote their attention and labours principally, in the first place, to the route of the proposed railway, in case it should be found, upon examination, to be favourable for the construction of such a road. They were influenced, to this determination partly by the circumstance, that greater progress appeared to have been made by the bordering inhabitants in exploring that route, so that, on this account, as well as on account of the shorter distance, greater progress might probably be made during the season, in exploring and surveying it, than could be made in the other. The Commissioners were also influenced to the same determination by the circumstance that the subject of constructing Railways seemed, at the present time, to excite great interest and attention. They accordingly proceeded on the seventh of August to examine, in the first place, such proposed routes of the Railway as might be shewn to them by the Committees of the several towns, or by any of the inhabitants of the neighborhood of the route, public notice having been previously given for this purpose.

The examination was begun on the eastern route from South Boston, through Dorchester, Milton, Canton, Sharon, the South part of Foxborough, a part of Mansfield, Attleborough, and a part of Seekonk, to India Point, the lower part of Providence, near the outlet of Pawtucket River. They were then shown a route branching from the former near the

east parish meeting house in Attleborough, passing through Pawtucket Village to the tide waters at the part of Providence near the termination of the Blackstone Canal. They were then shown a route passing from Boston Neck, near the full basin of the Boston and Roxbury Mill-dam, by Wait's Mills in Roxbury, along Stony Brook, a short distance from the residence of Mr. John Lowell, crossing the Dedham Turnpike about half-way between that town and Boston, not far from Swallow's Tavern, and passing on the westerly side of the Fowl Meadows in Dedham, through Walpole, Wrentham and the northern part of Attleborough to Pawtucket, and thence to Providence near the outlet of the Blackstone Canal as before mentioned. They were also shown a route between the two preceding, from Pawtucket through the more central part of Attleborough to the central part of Foxborough, and intended there to turn to the east or west, and connect with one of the former routes in Sharon on one side, or Walpole on the other. A route was also examined leaving the western route already mentioned near the half-way house between Boston and Dedham, passing through Spring Street Parish in Roxbury, crossing Charles River, recrossing it, passing through Dedham Village, and striking into the route before explored near the easterly part of Walpole. At the request of a number of gentlemen of Mansfield, a branch was also examined leaving the eastern route above mentioned in Sharon, passing through the central

part of Mansfield and coming into that route again in Attleborough. The grounds in Foxborough, Walpole, and Attleborough, between the two general routes, were also explored with some care, for the purpose of discovering some intermediate route between those which had been pointed out. And subsequently in the course of the surveys, lateral examinations were made in many different parts of the general routes, for the purpose of discovering, if possible, the best mode of avoiding or surmounting the various obstacles interposed, or shortening the distance between given points. A route in particular was explored leading from the eastern or Sharon route, through the central part of Attleborough to Pawtucket.

Before commencing the survey, the Commissioners were desirous of gaining as thorough a knowledge of the face of the country as practicable, not expecting, however, with the greatest attention they could bestow, to be able to fix, in all cases, upon the precise course the road ought to take, through either of the general routes ; which can be done only by making numerous lateral surveys affording the means of a more satisfactory comparison than can be made by a mere view, however carefully taken. A first examination and survey can only give a general view of the distances, and the facilities and obstacles to the road, sufficient to form an opinion of the expediency or in expediency of commencing a work of the kind, but by no means so accurate that it ought to be implicitly followed

in the execution. And we are the more careful to mention this, from a conviction that too great circumspection and diligence cannot be bestowed in planning and locating such a road, since an error in this respect is not only a source of great inconvenience, but may be absolutely without remedy.

In making these general examinations, the Commissioners had the most obliging cooperation of the Committees of the different towns and of the inhabitants bordering upon the routes, who afforded them every possible facility, by furnishing them with plans of former surveys and communicating local information, without which assistance the labour of exploring the country would have been much more arduous and the progress much slower.

In respect to those parts of the routes lying within the State of Rhode Island, the Commissioners were assured by gentlemen of respectability and influence in that State, that the projected improvement would there meet with a ready and cordial cooperation.

After viewing the territory, and on coming to the question as to the surveys that should be made, it appeared that there were four principal obstacles to a road in a right line from Boston to Providence; namely, the high grounds in Roxbury; the Fowl Meadows lying partly in Dedham and partly in Canton; the high grounds extending across the line in the towns of Sharon, Foxborough, Walpole, and Wrentham, of which Moose-hill is the summit; and Bungy Swamp in Attleborough. The proposed

routes were shaped with some reference to these obstacles; they appeared, however, in general to be much more favourable than had been expected. But in so long distances of lines varying more or less irregularly in the different parts, and passing over grounds of some diversity of surface and character, the Commissioners found themselves spontaneously agreed, that a mere view, in which there is necessarily so much room for error in estimating distances, heights, and bends, could not afford them the means of forming a satisfactory opinion as to a general preference, and much less of so presenting the subject as to give the public the means of forming such an opinion. They therefore, at once, and without hesitation, came to the determination to make a general survey of one route passing more to the eastward, and another more to the westward of these obstacles and barriers, with some few lateral surveys at the more difficult points. There had not, however, as yet, been sufficient time, after the organization of the Board, to make all the necessary preparations and arrangements for commencing the survey. They accordingly occupied a short time, in examining the sources for supplying feeders to the northerly part of the proposed Norwich Canal, that they might, if possible, be prepared to report in the course of the season, upon the question referred to them, whether the proposed Canal could be supplied with water without injury to the water privileges on Chickope River, a subject on which they supposed a report would be expected during the present winter.

The Survey of the Railway route was commenced on the twelfth of September, and the subjoined Report will shew what progress has been made, and will probably afford to the Legislature the means of forming an opinion of the expediency of pursuing the project.

On the Survey being completed, as far as the season would permit, and the plans and profiles being drawn, which could not be finished until very recently, the first question that presented itself to the Board, on examining the distances and profiles of the routes, related to the preference of one or the other, or parts of each; for it will be perceived, on recurrence to the Survey, that they nearly intersect at one point, and may be made to intersect at another, on the survey of another branch, for the survey of which the season has not afforded sufficient time. It was found that the routes do not exhibit such striking differences as to give a decided and obvious preference of either, independently of the results of surveys of branches yet to be made, and of the particular estimates of the expense of levelling and embanking, which there has not yet been sufficient time to complete. Another circumstance is also considered, by the Board, to be of very material importance in giving a preference to one or the other general route, or to many parts of either, namely, the demands that should be made for damages, and the contributions that should be made towards levelling and fencing the road. Many of the proprietors of lands on each route, ex-

pressed their willingness to give the land for the road, and others to level and fence it through their lands, in consideration of the advantage they should derive from it. We have no doubt that a great part of the land necessary for the road, which will be but little, will be readily given, and no inconsiderable part of the levelling and fencing done gratuitously. But general declarations are not so good grounds of calculation, as specific written propositions; and the Commissioners did not think it expedient, nor did they think themselves altogether authorized, to receive any such propositions in the present stage of the project. Though the route ought not to be diverted materially from the best course for a small economy in building, thus burdening the travel, in perpetuity, with a superfluous expense, yet, all other things being nearly equal, as in the routes and parts of routes in question, some consideration may be had to the facilities, that may be rendered by the inhabitants towards constructing the road.

For all these reasons the Board think it not expedient to go, at present, into a minute comparison of the advantages and disadvantages of each route, for which, indeed, they have not, as yet, all the requisite means. Nor does it appear to them to be of any importance that this should be now done, since, without any such comparison, they think they may be able to state what kind of road may be made, and also the other more material circumstances, relating to the general expediency of pursuing the project.

It appears, then, that a Railroad can be made not materially varying in distance from the present Turnpike road. It may be used without any necessity of extra power in more than one place, for a distance not exceeding three miles, or a little over; and this will be the less inconvenient, as it may be made the place of changing horses, and both sets may work through this distance in ascending, and return with the descending carriages. The rest of the road may be made without any *general* variation exceeding twenty or twenty-five feet in the mile, and the cutting, bridging, and embanking will not be so great as to present any serious discouragement to the undertaking.

Though we believe the whole road, excepting one part as already mentioned, may be brought within this general variation, we do not think this expedient. It is a fact of common experience, that a horse may, for a short time, without injury, be made to exert a force three times that usually required of him. Thus a short ascent at the rate of fifty or sixty feet in the mile, preceded and followed by a level or descent, will require a less fatiguing effort, than a long ascent of twenty or twenty-five feet in the mile. The facility of the road will therefore depend no less upon the length, than the rate of rise, of the ascents. This circumstance is of very material importance in planning the road, as it may save a great deal of expense in cutting and embanking, taking great care in all cases, not to at-

tempt too great a saving, since an error on that side cannot be remedied without great expense.

The question occurs, and a very important one, what kind of road is preferable ; and in determining this question, the Board have kept in mind the very great importance of constructing a road, intended for public travel, in such a manner that it shall be very little liable to such derangement and injury as shall interrupt the use of it, or expose passengers to the risk of accidents. And then again it is well known, that the same work in repairing such a road is much more expensive than in building it, since it is done in small jobs and scattered pieces, in which the preparation in setting about the work is almost equivalent to the doing of it, and the charges therefore must be proportionally higher.

It is taken for granted, in the first place, that whatever kind of Railroad is made, the horse path is to be well gravelled and the road well drained.

As to the plan of a single rail with the load divided and suspended on each side, it has not, that we can learn, been, as yet thoroughly and practically tested. There seem to be some grounds to doubt of its probable utility as a public road, and at any rate, it seems hardly advisable to make an experiment upon so large a scale as a road from Boston to Providence. In the present state of the art of roadmaking, it is thought hardly to admit of a doubt, that a Railroad on this route should have two tracks for each carriage.

Though Railroads consisting entirely of wooden rails, have been built in some parts of the United States, and are projected in others, the Board were of opinion, for the reasons already given, as well as for others, which it seems unnecessary to state, that such a road should not be built upon this route and the question of making such a one was given up by them very early after turning their attention to the subject.

The next question was whether to construct the road of strong iron rails suspended at distances of three and a half or four feet, or to have the iron track rail supported the whole length and in every part by a line of stone or timber. It seems that the best English Railroads are of the first description, which was a reason for not departing from that plan, without the most satisfactory grounds. If the circumstances, and means of making such a road, were precisely the same in England and this country, a departure from the plan which the English had experimentally proved and adhered to, should, no doubt, be made with the greatest caution and only after repeated experiments. But we immediately meet with material distinctions between the circumstances and facilities for constructing these roads in the two countries. One obvious difference is the severity of our climate. To secure the supports placed at distances of three or four feet, from the effects of the frost, would, according to the best estimate we can make, cost as much labour as to construct a continued line of foundation. It is

apparent that the digging a continued trench for a foundation is an inconsiderable expense, except in a clay bottom or marshy ground ; in rocky or gravelly bottom none is necessary. The expense certainly could not exceed that of a row of excavations to the depth of two or two and a half feet, at distances of only a foot and a half, or too feet from each other. And the filling up of a continued trench again, with stone and gravel, will be a small proportional part of the expense of the railway. The whole work of making this trench and filling it, is only what a prudent farmer ordinarily does in making a good piece of wall. And the same trench may in many parts answer the double purpose of a foundation and drain, being so filled with stone as to admit of a current of water. Whenever it will answer for this purpose, the only expense of the foundation, will be the filling of the trench, for the trench must have been dug for a drain though it had not been needed for a foundation. It appears, therefore, we think very plainly, that the making a continued line of foundation presents no serious obstacle on the score of expense. In England, on the other hand, where the effects of frost are less violent, we may well suppose that some economy may be made in respect to the foundation, by placing supports at short distances ; since comparatively less work is there necessary in establishing the supports.

But the more material difference in the circumstances and means of the two countries, is, that iron is comparatively cheaper in England than in

this country, and stone and wood are comparatively dearer; and, besides, the English have not, as we can learn, any plentiful and cheap supply of a suitable kind of stone, such as our granite, for making a continued line of foundation for the iron track. Another reason in favour of such a line of foundation rail is, that the art of getting out and working stone, is, nowhere practised with greater skill and economy than in this Commonwealth.

In comparison with England, therefore we have great advantages in works requiring the use and working of stone or wood; they on the other hand, have, as yet, some advantage in the comparative cheapness and facilities in the use and working of iron. This is a reason why one plan of construction may be the most economical in England, and another in this country. And if, by a remission of the duties on iron for this particular purpose, we can avail ourselves of all the advantage of its cheapness abroad, we may then combine with our own, all their facilities for constructing this species of road. It is possible, however, that some of the large iron works of this country might afford to supply the iron upon so extensive a contract as this Railway will offer, almost as cheap as it can be imported free of duty. Such an opinion has been intimated to the Board by a large dealer, and experienced manufacturer of iron.

As to economy the Board is well satisfied that it is more economical to make a continued foundation on a plan for supporting the track rail through the

whole distance, whereby the expense of the foundation is very little if at all increased, and the saving in the quantity of iron is very great, since it is obvious that if the track rail is supported at every point, it may be much lighter and consequently much cheaper, than if supported only at distances of three and a half or four feet.

The only question then is, whether a track formed by such a rail is as good, and we think it may be so constructed as to be decidedly better. That it will answer the purpose well, there is no doubt; this is proved by the Railroads of this construction in actual operation. The reasons of its being preferable are that it gives the opportunity of fastening to the line of support as frequently and at as short distances as may be thought necessary, thus binding together the whole weight of the track rail and the foundation rail, and this united weight helps to sustain the track against sudden shocks and jars; a circumstance of material importance in the severe weather of our winters, when iron, as is well known, is very easily broken by a sudden shock or jar.

In some of these reasons in favour of a continued line of foundation rail we have presupposed a preference of the use of stone for this purpose, instead of wood. One reason for preferring stone is that the iron track supported by an unyielding substance at every point, is not liable to bend with the weight of the load; for a rail, especially of wrought iron, supported at distances of three or four feet, will be

slightly bent every time a wheel, heavily loaded, passes over it, and thus offers a slight resistance to the motion of the wheel, which must ascend after passing the centre of the rail. The degree of resistance from this cause will depend upon the strength of the rail in comparison with the weight of the load, and is less, therefore, in a rail supported at distances of three or four feet, than in case of a more slender iron rail supported its whole length by a yielding and somewhat elastic material. On the Quincy Railway, for instance, the same load moves much more easily on the part of the tracks laid on granite, than upon those laid upon oak, and much more easily upon these last, than upon those laid on pine. This difference is so considerable (that is the depression of the rail under the wheel is so much greater in one case than in the other) that as we understand from the person who has driven the waggon on that Railroad during the past year, a sudden jar or jolt is occasioned in passing, at a quick walk, from one to the other; though the surface of the iron rail along the junction is perfectly smooth and even, when no load is passing. The superintendant of that Railway estimates the difference of resistance from this cause, on a rail laid upon granite, and one laid upon oak, to be thirty per cent; that is, three horses can draw upon a level iron rail, supported upon granite, as great a load as four can draw on one laid upon oak. The difference between pine and granite, in this respect, will be still greater. The effect is,

that, though the road may be perfectly level when no load is passing, the same resistance is offered to the motion of the carriage, as if the road were ascending.

Another reason in favour of a stone foundation rail, instead of one of wood, is that the iron track is much more liable to be injured and broken upon the latter. The iron track can be more perfectly and securely fastened to stone than to wood. A road of wooden foundation rails is more liable to accidents and interruption of the passing, and will require much more frequent and expensive repairs. And what makes the granite foundation rail decidedly and conclusively preferable, is, that on the route in question, the first cost will be less. A road upon wooden foundation rails requires cross pieces of stone, for a support to the wooden rails. It would not, as well as we can judge from the facts and opinions we have been able to collect, be expedient or safe to make a road on this route without such cross supports; and such a road will undoubtedly cost more than one with granite foundation side rails. We are not perfectly satisfied that the same would not be true with respect to a road upon wooden cross timbers, on this particular route; but such a road seems to be entirely out of the question.

The Board is accordingly of opinion that the best plan of a Railroad for this route, is an iron rail upon a continued line of granite. The granite blocks need not be of any exact dimensions; the

material circumstances are a pretty uniform edge upon the upper side for the rail, and a sufficient breadth of the under side to bed the stone firmly. A block about equivalent to a foot in diameter appears to be an adequate size ; we would not imply that the stone should be square, the better form being that of greater breadth at the base than at the top. But there appears to be no necessity of great exactness of dimensions and surfaces.

It is but a small expense to hammer a sufficient breadth for the iron rail, upon the upper surface and inner edge of the stone. The heads probably need not be dowelled together, as the iron track seems to bind the line of rail together with sufficient firmness ; nor need the heads be fitted with great exactness, except near the top of the stone under the iron rail, to the depth of three or four inches ; below this depth the ends may be somewhat irregular, with the corners broken off. By placing the iron rail on the inner edge of the stone, the whole track will support itself more firmly against lateral pressure, and to strengthen it still more, it should be supported both on the outside and inner side, by stone or very coarse gravel, to within three or four inches of the top. Upon this construction the cross blocks of stone may be dispensed with, the tracks will stand with perfect firmness without any cross pieces to bind the sides of the road together, and the great economy of this plan of construction depends on this circumstance. From the appearance of those parts of

the Quincy Railway laid upon granite, it seems not improbable that two lines of granite firmly laid upon foundations not subject to be moved by the frost, and bound together with iron rails firmly nailed to the stone, might stand with perfect steadiness, without being filled in on the sides; for we observed that where the backing had fallen away a little for some distance, the track stands perfectly. But as the filling in on the sides of the track is not expensive, it seems more prudent to give the tracks this support; and they ought by all means to be filled in as high on the outside as on the inside. We learn that granite could undoubtedly be now contracted for, to be delivered at the Boston extremity of the route, at an expense not exceeding sixteen cents the running foot; and it is thought that it may be obtained at a lower rate on a large contract.*

* Very different estimates have been given us of the cost of the stone for the foundation rails; nor is it practicable to say what advantages may be discovered in the vicinity of the route for procuring it. We understood from a person at Pawtucket, practised in working stone, that stone of a square foot in dimensions, supplied by him for the Blackstone Canal, cost him at the quarry 20 cents a running foot, in its rough state. On one of the routes a proprietor of a quarry thought he could afford to supply it at 12 1-2 cents per running foot, for the Railway, delivered at his quarry. We find, however, that stone of suitable dimensions for this purpose may be had at the Quincy Quarry, for 7 1-2 to 8 cents per running foot. Possibly it may be found that it can be obtained lower at other quarries, from which the

The iron rail suitable for such a road is estimated to be about of the dimensions of $2\frac{1}{2}$ to $2\frac{3}{4}$ inches in breadth, by $\frac{5}{16}$ to $\frac{3}{8}$ of an inch in thickness. The weight of iron necessary for one running foot of each track, including the rail and also the iron for the fastenings, estimating at the rate of eleven fastenings for every eight feet, will be $2\frac{84}{100}$ lbs. The rail and the fastenings must be heavier and stronger at the places for crossing roads, and at the places for turning out. To avoid any mistake, these weights and dimensions have been obtained by weighing and measuring the iron rails prepared at the works on the Mill Dam for the Quincy Railway. This iron, we learn, may be had on a large contract, at a price not exceeding six cents per pound, including the rail and nails completed and ready to be fastened to the track.*

expense of transportation will be no greater. We think it probable that the stone will not cost over sixteen cents per running foot, delivered at the Railway where it is to be used; it may possibly be obtained two or three cents under this rate.

* This estimate was made upon Swede's Iron, at the cost delivered here, of about \$84 to \$86 per ton, of 2000 lbs. or 4 3-10 cents per lb. This iron does not come in bars of suitable dimensions; it must be rolled, cut, and punched, and the holes countersunk. The rods (of Peru Iron, at 9 cents per pound, or \$180 per net ton) must be cut into nails. Some of the rails must be bent to conform to the curves of the road. It is the expense of these operations, with the extra cost of the rods per pound, which makes the estimate 6 cents per pound, or \$120 per ton, instead

A question occurred to the Board, whether to adopt rails of similar weight and dimensions. It

of \$86, the estimated first cost. There is also some expense for the transportation of the iron and rails, which, however, may, we presume, be covered by the above estimate, since the iron can be procured for about \$80 per net ton.

Different opinions have been given by persons skilled in the use and working of iron, as to the kind that ought to be used,—some preferring Swede's, others English, and others Peru. One says, English iron is not so tough and strong, and will not hold the nails so well, and will be more liable to be injured at the junction of the foundation stones, which cannot be laid to an exact level, so as always to present a surface for the iron rail which shall not vary in some slight degree from a straight line. Another fact mentioned is, that English iron, compared with Peru, is more liable to rust, a circumstance of some importance in reference to its use on a Railway, where this would be one of the principal causes of its destruction. Others again say that English iron is more flexible, and best adapted to this use. These are all questions to be settled when it is determined to carry the project into execution.

If English iron shall be thought to be well adapted to this particular use, it may make a great saving, for this iron, as we understand, can be imported at the cost of \$80 a ton, of 2,240 lbs. or 3 4-7 cents per pound, rolled and of suitable dimensions, and it may be found that rails may be imported ready perforated for the nails, and a suitable number of them curved to suit the curvatures of the road, at a small additional expense. And if, on experiment, or further investigation, it shall appear that a breadth of two inches or two inches and a quarter of rail, is sufficient, without increasing the thickness, a very important saving may

is apparent that a track upon a granite foundation rail, admits of either an edge rail or a plate rail. But we are inclined to prefer the plate rail, for this kind of track, because the nails or fastenings ought to be driven alternately on one side and the other of the rail, and they will accordingly take stronger hold of the flat rail than of one having a round upper surface, unless this latter is made much heavier, so as to make its edges of the same thickness of those of the plate rail. Another reason for preferring the plate rail, is, that it does not wear channels in the wheel tire, which occasion increased friction, especially at the bends of the road and the places of turning out. It would, therefore, be necessary to renew the wheel tires oftener, whereby the expense of carriages would be increased, without any equivalent advantage, as we can learn, but rather with an additional disadvantage of greater resistance to the motion of the carriages on the winding parts of the road; that is, supposing both axletrees to be fixed to the frame of the carriage, as are those in use at Quincy.

Another reason for preferring the plate rail, is, that the tire of the wheel moving upon the flat surface of the rail, seems more to favour the keeping the whole track, including the foundation

be made. To what extent a saving can thus be made, or whether a cheaper and better road can be constructed by the use of a smaller quantity of a dearer and better kind of iron, are questions, no doubt, that ought to be well considered, and very deliberately settled, before the contracts are made.

rail, on its level. And we are inclined to adhere to the breadth of the Quincy rail, instead of contracting it to two inches, partly because it has been tried and is found to answer well, and also because it seems to throw the weight of the load about far enough towards the centre of the rail stone.

Fastenings of not less than three eighths of an inch in diameter, and from two to two and a half inches in depth, occurring on an average once in twelve or fourteen inches, are thought to be sufficient, except at the ends of the bars. At the crossing of roads and the places of passing to the side tracks, where the iron rails are heavier and thicker, the fastenings should be increased, accordingly, in length and diameter. An error in respect to the strength of the fastenings at the ends of the rails, would be a cause of serious inconvenience, it therefore seems adviseable to make them of a greater length, not less perhaps than three inches, and of greater diameter, if an increased diameter should be supposed to give additional strength. Economy, however, may be practised in respect to the intermediate fastenings, since the expense of putting in additional ones after the road is in use, will be very little greater than that of putting them in at the time of making the road. As long as the ends of the rail are fast, there is little danger of accidents. This is illustrated by a circumstance which came under our observation on the part of the Quincy Railroad laid upon granite. Three or four of the fastenings of the central part of one of the iron

tracks had been loosed and detached, a distance of about three feet and a half, some two months ago or longer, not in the ordinary use of the road, but in consequence of the hook of a chain fastening to the rail, as a team was passing across. Though this was at the loading place, and on a part of the road very much exposed to accidents and injuries, the road has been used during all that time without any inconvenience or any apparent injury to the iron track or foundation rail. The facts that no other fastenings of this part of the road appeared to have been started, that there was no sign of any other damage in any part of it, that these fastenings were started only in consequence of an extraordinary accident, and that no inconvenience had resulted, though the injury had not been repaired, seemed to be very strong testimonials of the excellence, durability, and security of a road thus constructed.

We have been somewhat minute, perhaps too much so, in describing the proposed construction of the road ; but we were unwilling to be responsible for the recommendation of any construction of road, without describing it more particularly than would have been deemed necessary, if the public had greater experience and knowledge of this kind of road.

The only remaining question, on the subject of the construction of the road, relates to the number of tracks ; and on this question we are decidedly of opinion that it is expedient to construct only one set of tracks. This plan is not proposed as a com-

mencement of the road, to be afterwards made a double one, but as a permanent plan and quite adequate to all the purposes for which this road can be used.

This plan requires that the carriages shall start at a certain time from some given points, as Boston and Providence, and travel at certain rates of speed ; the coaches, we will suppose, at the rate of nine miles an hour ; the waggons, at that of three miles an hour. Any other points of starting or rates of travelling will be just as convenient. But some points and times of starting, and some rates of travelling must be fixed. On account of the supposed inconvenience of such regulations, with other objections, this plan struck us unfavourably at its first suggestion ; but the objections seem to disappear on examination. As to the inconvenience of a certain time of starting, the stages are now run upon this regulation ; they start at a certain hour from Boston and Providence. The teams may also as well start at a certain hour, as choose their time of starting, especially when transportation is done in great masses, as it would be upon such a road. And then, as to the travelling at a certain rate, it is no more than all the stage coaches now do, that convey the mail upon the common roads, though they are sometimes deep and difficult, and often out of repair,—whereas, the Railway would always be the same road, and travelled with nearly the same facility at all times. There seems, therefore, to be no inconvenience worth con-

sidering in requiring the coaches and heavy loaded teams, to arrive at certain points at certain times. As these will be places for stopping and changing horses, sufficient time will be given to cover any difference of calculation, or any trifling difference of speed; but it is believed there would be scarcely any variation in this respect, for the drivers being constantly employed on the road, and frequently meeting and communicating with each other, would soon fall into a very uniform and regular system. And it is well known that a driver constantly employed on the same road, and knowing the weight of his load, can, upon the common roads, in ordinary travelling, compute, with great exactness, at what time he shall arrive at a certain point. We do not see, after all the reflection we can give the subject, that there can be any great inconvenience in fixing the time of starting and the rate of travelling.

And even if there should be some inconvenience, it is thought that it cannot be so great as not to be offset by the immense saving thus made in the cost of the road; for if we assume the distance of the route to be forty-two miles, and propose double sets of tracks with five places in a mile for turning out, a saving may be made on this route, by regulating the time of starting and rate of travelling, of the expense of 45, 49, or 56 miles or more, of one set of tracks, according to the plan of passing that might be adopted; and the expense of the road would thus be reduced about one half.

If this economy can be made by merely regulating the time of starting and rate of travelling, there is thought to be no possible doubt of the expediency of making the saving. At any rate, the plan is entirely safe; for if another set of tracks should, on experiment, ever be found to be necessary or convenient, it can be subsequently built when it is found to be wanted, just as cheap as if it had been a part of the original plan; for the most economical way of building two sets of tracks, would probably be to complete one set first, and use it as a facility in building the other. If there was, therefore, any probability that one set of tracks would answer, it would by no means be expedient to begin the second set until an experiment had been made of the single set. But we think the single set will answer all the purposes of the road perfectly well; and be even more convenient, with the regulations above mentioned, than a double set would be without similar regulations.

To find whether any disadvantages will attend these regulations, we will suppose, for the convenience of numbers, that the whole length of the route is forty-five miles, assuming three extra miles to cover the time of delay at the meeting places. Let a stage coach, or three or four coaches, start from Boston, and another, or any number, from Providence, at seven o'clock in the morning; and travel at the rate of nine miles an hour; let loaded wagons start from both places at the same time directly after the coaches, travelling at the rate of

three miles an hour. On the arrival of the two coaches at Boston and Providence at twelve o'clock, let two others start from the same places at that time, travelling, as before, at the rate of nine miles an hour. Let the wagons proceed by relays of horses and change of drivers through the whole route, at the same rate, arriving at Boston and Providence at ten o'clock in the evening. It will require but three turning out places for these earriages to pass each other; one in the middle of the route, and the other two at equal distances towards each extremity; and as the stage coaches and wagons will go in caravans, according to the number of passengers and quantity of loading to be carried, the wagons will all follow each other in passing off upon the side tracks at the places of meeting, so that it will be necessary to change the moveable rails (or gates as they are called at Quincy) but once for them all to pass; and it would be the same in respect to the stage coaches. They could readily move out of each other's way, each caravan passing to its proper set of side tracks, leaving one to occupy the common Railway. Three sets of side tracks will be necessary at the centre of the route, but only one set at the other points of meeting. Others may be added as they are found to be wanted, at any loading, unloading, or starting places.

This mode of travelling in caravans would be the most convenient, in case of two sets of tracks; for if we suppose twenty carriages to be on the

Railway, and to meet each other promiscuously, and without any regulations, if it should happen that they travel singly, it might be necessary for each one to stop ten, and some fifteen or sixteen times, to change the moveable rails in order to pass the others; an inconvenience in itself much greater than that of starting at stated times and travelling at certain rates of speed.

In case it is proposed to run a carriage from any part of the route, Dedham for instance, or to run an additional carriage through the route, which shall start at a different time, it will only be necessary to compute where it will meet the others, and make side tracks for passing at those points.

One inconvenience of this plan would result from accidents to the carriages or horses that might detain them on the road. This would not be likely to happen frequently on a road constructed on the above plan of granite foundation rails and iron tracks, which allows of the most easy and secure motion of the carriages that seems to be possible upon any kind of Railway. And when any carriage should break down, it will only be necessary to remove it from the Railway. This could happen very rarely to the coaches, for their loads will be comparatively light; and if it should happen once a month to some one of the wagons (of which there would be little probability) the inconvenience would not be a sufficient consideration for doubling the expense of the Railroad.

The only other inconvenience would be the interruption of the travel by injury to parts of the Railway, whereby it should be made impassable. It is however one advantage of a road upon the proposed construction, that it does not suddenly become impassable ; even in case of the iron rail being torn off, the wheels can pass on the granite. It could but very rarely happen that any part of the road should be so much injured as not to admit of being repaired from the time of one caravan's passing, to that of the arrival of the next. If any parts of the road should be built upon wooden piles with wooden foundation rails, over marshy swamps, ravines and rivers, and those parts should require to be rebuilt in the course of fifteen or twenty years, if the interruption of the passing should be a serious inconvenience, a set of side tracks might be made through the whole of this distance, before the old tracks should be so decayed as to be impassable. It is thought that the practical inconveniences from interruption of the travel by injury to the road, will prove to be very trifling, in case of reasonable attention in superintending and repairing the road, and without such attention, any number of sets of tracks, would not secure the travel from interruption.

It may be a matter of doubt, at first view, whether this system of conveyance, would not require very long processions of coaches and wagons, to do all the transportation upon this route. If this should be the effect, it seems to be a matter of

no inconvenience; it would only require side tracks of sufficient length to accommodate them. But there is no danger of too great a number; for if we suppose three coaches and three wagons with two horses each, to go in each company, at the above times of starting, they may transport seventy two tons of merchandize and three hundred passengers through the route in a day.

As to the danger of interruption of the use of a Railway by snow, the last winter gave the opportunity of a pretty fair experiment in this respect, and we understand the passing on the Quincy Railway was suspended from this cause but a very short time. The use of this kind of road during the winter, and its convenience for transportation of passengers, are evidently very great advantages in its favour in comparison with canals.

Though the locomotive steam engine, where the country offers advantages for its use, is calculated to be only half as expensive as equivalent horse power, it is thought not to be adviseable to make any estimate of the advantages of the road in question, predicated upon the supposed application of steam power. The advantages of this improvement may, at some future time, be greatly increased by the substitution of steam engines for horses, but we will confine our estimates to the supposed use of the latter only.

It may be assumed, at a moderate estimate that two horses will transport sixteen tons over this road at a speed of three miles an hour, which will

make twelve tons of loading, allowing one quarter of the weight for the carriages. We will assume that the same team will transport twenty-five passengers at the rate of nine miles an hour, this being in fact only what one horse may do. Each horse, working through a quarter of the route at one stage, whether in the wagon or the coach, may pass over half of the route, or what is equivalent, every day.

This estimate may be supposed to be low—we wish to bring it within what can unquestionably be accomplished.

A coach driver may go through the route, and a wagon driver half through it, or what is equivalent, every day.

According to this computation, it will require four horses and one driver to transport twenty-five passengers, and four horses and two drivers to transport twelve tons of loading, each day, through the route.

Supposing the cost of a horse to be \$75, that he will be serviceable seven years, that he may work 285 days in the year, that the blacksmith's and farrier's bill will be \$10 a year, and the feeding \$1 75 per week, all these expenses will be forty cents a day for 285 days during which he is supposed to work. The wages of the drivers may be estimated at \$1 per day. Taking the cost of a wagon at \$400, and that of a coach at \$500, it is estimated that the cost of supplying and repairing wagons for the above load will not exceed \$1.33 for an entire trip, and we will estimate the expense of the

coach at 66 cents. The result is, that it will cost $13\frac{1}{2}$ cents for the transportation of each passenger, and $41\frac{1}{2}$ cents per ton for the transportation of goods through the route. This gives about one third ($\frac{1}{3}$) of a cent per mile for the expense of conveying passengers, and about one cent per ton per mile, for merchandize.

The usual fare in the coaches is now \$2, or \$2 50. It is estimated by persons experienced in the conveyance of passengers, that they cannot be transported on the common roads through this route, at a less expense than \$2,—some say \$2 50 for each passenger. If the conveyance on the Railroad is put at \$1 for each passenger, allowing that he has to pay something at each end of the route for conveying his baggage to and from the coach, the passage will be cheaper than it possibly can be afforded on the common roads. If the expenses were the same, passengers would, undoubtedly, prefer the railway, as it would be more secure from accidents, free from dust and mud, more rapid, and a more easy and agreeable mode of travelling.

The expense of transportation of loading is now \$10 per ton, between Boston and Providence, and \$8 or \$9 between Boston and Pawtucket. The utility of the Railway will depend in a great measure upon the economy to be made in this transportation, for it is not so important that the fare of passengers should be reduced below the rate at which it must be fixed to secure a preference of this mode of travelling. We will assume that the

charge per ton for transportation upon the Railway is to be \$5 between Boston and Providence, and \$4 50 between Boston and Pawtucket, being about 12 cents per mile, without including the charge for bringing the goods to the Railway, and delivering them to the consignees. The transportation could no doubt be afforded lower than this; but this rate will be low enough to command all the present amount, and much more.

In order to command the transportation of the intermediate places, it would be necessary to put it at a still lower rate proportionally, probably as low as 7½ cts. per ton per mile, besides the expense of taking on board, and delivering the goods. The average rate by the present mode of conveyance is 24 cents.

If the expense of transportation can be thus, at once, reduced to about half of its present amount, by means of the Railway, it will be an improvement of sufficient immediate public importance; and it hereafter may be made still more important, by a still greater reduction of the expense of conveyance, as the increase of business shall be found to admit of it.

But will the road yield a sufficient income to defray the incidental expenses, including repairs, and pay interest on the cost? For though a work of this kind may, on the whole, be a real improvement, and actually advantageous to the community, taking into consideration all its beneficial consequences, though its direct net income may not pay interest, at the usual rate, on the cost, still the proba-

ble income is a very material inducement or discouragement to the undertaking.

The present amount of travelling and business on this route is only a ground of estimating what they would be after the completion of the proposed improvement. It is sometimes estimated that a reduction of the expense of conveyance fifty per cent, independently of any increase of population and extension of industry, and by the mere circumstance of shortening, in effect, the distance, and opening markets to many products and supplies to which their access was before either discouraged, or prevented by the expense, will double the amount of business. That the effect, in this respect, is very great, there can be no doubt, though it would probably not be safe to estimate it, in all cases, at this ratio. It is well known, again, that an improvement of this sort; not only enlarges the circle of territory within which interchanges can be made through the channel thus opened, but has the effect of actually increasing the amount of productions, and supplies, produced, consumed, and exchanged, within this circle. It has the effect of increasing the productiveness of the same degree of industry, and also of increasing the amount of industry. And no species of public improvement hitherto introduced; combines greater facilities, than the Railway, for multiplying and extending its advantages, by leading new branches into the main channel from different parts of the country, as they may be demanded from time to time, by the growing population and accumulating business.

. According to the statements of persons having the best means of knowledge on the subject, about 35,000 passengers passed along this route in the stage coaches, during the last year. It appears that the travel has been annually increasing of late years, at the rate of twenty or twenty-five per cent. Besides the stage coach passengers, it is estimated that from three to four thousand persons travel through the route, annually, in private carriages. There is also a good deal of passing from one intermediate part of the route to another, some of which now goes in stage coaches, but much more of which would go upon the Railway. It may then be safely estimated that the annual number of passengers on the Railway, during the first five years after its completion, will not be less than fifty thousand. The number will probably be greater than this the very first year. It admits of being greatly increased by connecting lines of stage coaches with the Railway coaches, at different points of the route. Such a line may pass off towards Taunton, which would bring about seven thousand passengers annually over about one third part of the Railway, being equivalent to 2,300 passages through the route.

Much of the heavier transportation between Boston and Providence, Warren, Bristol and Newport is done by water. Besides transient vessels, four regular packets, each of sixty or seventy tons burthen, are constantly employed in this trade, and make a trip, on an average, once in three weeks.

Persons conversant in this trade state that these packets usually carry a weight about equal to their tonnage, that is 60 or 70 tons each, at the average freight of about \$2 per ton, though the rate varies greatly. The transient vessels are supposed to carry about one quarter of the whole quantity conveyed by water. It is supposed that seven eighths of this transportation is between Boston and Providence. The result is a water transportation between those two places of 5,250 tons annually. The land transportation between Boston on the one hand, and Providence and Pawtucket on the other is about 1,700 tons.

It appears, therefore, that, at the present high rate of land transportation, nearly one quarter of the trade takes this route. A greater proportion of the land transportation is that of the more valuable articles, because the insurance on these by water, is higher in comparison with their weight. The insurance, for instance, on a ton of cotton, is, in the summer season, equal to six tenths, and in the winter season, nine tenths of the freight; and on manufactured goods will far exceed it. Large quantities of the goods now conveyed by water are worth from eighty to two hundred and fifty dollars per ton. Taking the highest of these values, both the freight and insurance, even in the winter season, do not amount to one third part of the expense of land transportation. If, with this difference against land carriage, nearly one quarter of the trade goes that way, it shews a great

tendency of the trade to take that channel. The reason no doubt is, the certainty as to the time of arrival. The lower the transportation by land should be reduced, the greater would be the proportion of trade diverted into this route.

At the rate of transportation above proposed on the Railway, we may safely assume that eight fifteenths of the whole will take that channel; amounting to 3,700 tons.

This computation is grounded upon the present actual business ready to take the proposed route, when it is evident that the intercourse between the extreme points of this route, is of a kind to be immensely augmented. The opening of the Blackstone Canal will pour in a tide of trade, a great portion of which will naturally seek this direction. The increase cannot be estimated at less than one quarter, making in the whole 4,625 tons.

The intermediate territory between Boston and Providence is interspersed with manufacturing establishments; and a large business is carried on between every part of this territory and those two places. Much of the trade, as in the articles of granite, marble, bricks, ore, lumber, lime, iron, involves a great deal of transportation; and is of a kind to be suddenly and very extensively augmented by any new facility of conveyance. One mode of augmenting this business is illustrated by a small establishment in Attleborough for sawing marble, which employs but one man, and cuts from one to two tons per day. A small establishment, like this,

near the Railway, would supply a transportation of three or four hundred tons from the coast, and half or three quarters of the same quantify back again. Another business carried on in the neighbourhood of Boston affords a similar illustration. Individuals having establishments in the westerly part of Dedham, about thirteen miles from Boston, for packing beef and pork, have carried great quantities of the latter articles, and also staves and salt, to that distance from Boston on the common roads. The same articles being packed are again brought to Boston. The business of transporting these articles, together with that of bringing into the town the beef slaughtered at the same establishments, is supposed to make a transportation of six or eight hundred tons, per annum, a great part of which goes both ways over that distance. It is obvious that the Railway will offer a great facility for establishing these kinds of business, and also many others, along its course, each one of which will contribute to increase the mass of transportation.

It cannot be calculated that the inhabitants of the territory on each side of the extreme parts of the Railway within four or five miles of its termination, and residing at any considerable distance from its course, will make great use of it for the transportation of heavy articles, since the expense of bringing them to the Railway, and distributing and delivering them from the points of its termination, will bear too great a proportion to the expense of a direct conveyance on the common

roads, to the places of destination. But within these distances business will collect and accumulate near the line of the Railway, so that the road will, of itself, in these parts of the route, occasion a great amount of business that will contribute to its income. From each extremity of the route to its centre, the breadth of the territory is constantly increasing on each side, from which the products and to which the supplies will take this channel of conveyance.

If a line were drawn through the centre of the route, running across it to the eastward and westward at right angles, it would not divide the business that goes towards Boston and Providence; a great deal of the business of the intermediate territory does now, in fact, pass over this line, and the more the transportation is facilitated, the greater proportional quantity will thus pass to the more distant of the two markets. Thus in the case of the construction of a Railway, the same number of tons to and from the same points, in this intermediate territory will, in the aggregate, pass over a greater distance in miles.

We may suppose that near the central parts of the route, supplies and produce will pass on the Railway to and from points five miles distant from it. This gives ten miles in breadth of territory, near the centre of the route, which will supply business to the Railway. The breadth of this territory will narrow each way until it comes to a point at each extremity of the route.

The surface of intermediate territory, then, which will supply business to this road, will be 210 square miles.

According to the best computation we can make, from the returns from some towns and numerous statements of individuals, the amount of transportation of the kind that might take the channel of the Railway, in this territory is about one thousand tons to every five miles square. The road would greatly increase this amount; but without taking this increase into the account, the quantity is 8,400 tons.

Much of this quantity would pass across the centre of the route to or from the more distant market. We, however, will throw this circumstance out of consideration, and suppose all to go to or from the nearest of the two markets. The transportation will thus be equivalent to passing over one quarter of the route, or equivalent to the transportation of 2,100 tons over the whole line of the route.

The transportation between Boston and the towns of Taunton and Freetown, Dighton, Somerset, and Fall River village, goes, almost wholly, by land. A great amount is also done between Boston and Easton. This transportation takes the course of the Brush Hill Turnpike road, and the two other roads passing in the same direction. The whole of it, together with that to and from Canton, passes near the line of the proposed

routes, one third part of the distance between Boston and Providence. Persons well acquainted with this trade, estimate that 10,800 tons pass along this line annually to and from Boston. Deducting from this amount 3,000 tons passing to and from Canton, and included in our former estimate, there remains about 7,800 tons, a great part of which would go upon the proposed route the distance of fourteen miles, in case of the Railroad's passing on either border of the Fowl Meadows; supposing two thirds of this quantity, or 5,200 tons, to pass the above distance upon the Railroad, it is equivalent to 1,733 tons passing over the whole route.

According to the preceding estimates, the passages of persons will be equivalent to 50,000, over the whole length of the road, at \$1 each; the transportation in wagons equivalent to that of 8,450 tons through the route, 4,625 tons, at an average price of \$4 75 per ton, and 3,825 tons ($7\frac{1}{2}$ cents per mile per ton) at \$3 15, giving the gross receipts of \$84,000; deducting from which \$6,750 for expense of horses, carriages and drivers, for conveying passengers; \$3,506 for expenses of the heavy transportation; also ten per cent on these amounts to cover any error by under estimate of these expenses; and allowing \$4,000 per annum for superintendence and repairs, making nearly \$15,400, leaves a net income of a little over \$68,000.

The particulars of the preceding estimates have been separated, that the facts and grounds upon

which they are made, may be the better understood,
and any errors the more easily discovered.

All which is respectfully submitted.

JOSIAH J. FISKE, } *Commissioners*
WILLARD PHILLIPS, } *of Internal Im-*
JAMES HAYWARD, } *provement.*

Boston, Jan. 22, 1828.

MEMOIR OF THE SURVEY.

1. AFTER the general examination which had been made of those routes believed to be the most eligible for the proposed Railway from Boston to Providence, we commenced, at South Boston, a particular and definite survey of what we denominate the *Eastern Route*. The level was carried on and near the South Boston and Taunton turnpike, where we found no considerable elevation or inclination of the ground for the first two miles. Near the Savin Hill Hotel, we passed over the marsh on the east side of the turnpike, crossed the road near Mr. Robinson's, passed through Mr. Loud's pasture, and crossed the road near Mr. Clapp's, and a pasture known by the name of the School Pasture, (belonging to the town of Dorchester), into the mowing ground of Mr. Isaac Howe. Here we meet with an ascent too great to be surmounted by the ordinary power with which the Railway Carriage is to be propelled. This ascent admits, however, of being reduced within an admissible inclination, by cutting a few feet at the summit of the hill, and constructing a not very expensive embankment in the pasture below.

2. We continued the level near Col. Foster's tan yard,—leaving Mr. Newell's on our right, we passed near to Mr. James Pope's, and crossing the turnpike and Upper Milton road, near the residence of the Rev. Dr. Codman, we bore to the left and crossed Neponset river at Boies's Factory. Near the above mentioned Mr. Pope's, we made a descent of about 40 feet in a few chains, in a situation to require a very great expense to reduce it within the allowed limit. We then went back to a point in our survey, near the before mentioned Isaac Howe's, and carried the level in a direction west of Mr. Newell's, crossing the turnpike near the Hon. John Bailey's, and uniting this branch to the one just described, in the mowing ground south of Dr. Codman's. This route was found to be 12 chains shorter than that by Mr. Pope's; and though the summit is 10.02 feet higher than the other, it is capable of being reduced without great expense, and the difference of level so distributed as to offer no considerable obstruction to the carriage.

3. Crossing the Neponset at Boies's Factory, we proceeded with no objectionable difference of level, near Caleb Hobart's, in Milton, crossing the road by Moses Vose's, and intersecting Brush Hill Turnpike in the valley west of Mrs. Atherton's tavern, and proceeded nearly in a straight line to the estate of the late John Crehore, near Paul's Bridge, at the lower end of the extensive meadows lying between Canton and Dedham, called Fowl Meadows. Near the Crehore house some cutting and

embanking would be required. From this place, the trace of our survey lies along the eastern side of the Fowl Meadows, mostly upon the margin of the hard land; which, owing to the indentations of the line between the meadow and upland, occasions some undulations in the line of the survey, which, it may perhaps be thought might have been prevented by passing nearer to, and occasionally through a portion of the meadow. This, however, is by no means practicable, as the meadow is in many places very soft, and, through nearly its whole extent, liable to frequent inundations of two or three feet in depth.

4. After crossing the road leading from Canton to Dedham, near Capt. Turner's, we meet with some obstruction in a place known by the name of Fountain Head. This consists of a swamp of 10 chains in extent lying about 20 feet lower than the neighbouring grounds, from which it is separated on the north by a gravel ridge 2 chains wide, and 43 feet higher than the swamp,—and on the south by a hill of sand, which rises gradually for 12 chains, then abruptly for 3 chains, to the height of 67 feet above the level of the swamp; and then falls off abruptly 30 feet, and then gradually to the level of the country beyond.

5. From this point we continued the survey in the direction of S. 19° W. This refers to the Magnetic and not to the Astronomical meridian, which is the case wherever the direction of a line is stated in the course of this survey: as the magnetic de-

clination is known to vary from 6 to 10 deg. and even more, in different places in this part of the country, it is more convenient to refer ourselves to the magnetic than to the true meridian. We passed with no considerable variation of level, through an estate (and near the house) belonging to Adam Kingsley, of Canton, and crossing the road near Mrs. Hartwell's, about 20 chains north of the Canton Stone Factory, and passing east of Mrs. Hartwell's house, we carried the level in a straight line to the Factory dam, with a descent which may be sufficiently reduced by an embankment ten feet above the level of the dam. From the Factory dam we continued the survey nearly South, crossing the road at the distance of about 20 chains from the Factory, again 2 chains east of Silas Kingsley's, and a third time near Mr. Shepherd's, passing to the west of Kingsley's pond, and crossing Presbry's Factory dam. In this last $1\frac{1}{4}$ miles we ascended about 80 feet. From this place we proceeded in a straight line to Sharon Factory, leaving it on our left, and crossing the road at the west end of the Factory dam. The distance from Presbry's to this place is 66 chains, and the ascent 15.37 feet.

6. From Sharon Factory we continued in the same line, crossing the road by Edward Sables's, and passed up the south side of the brook to Johnson's Mill-dam, 56 chains from Sharon Factory, in which distance the ascent is 51.99 feet. We followed up the valley of this brook, keeping on an acclivity to the south, passing a cross road about

20 chains north-west of Sharon churches, and crossing some undulating ground, intersected the road leading from Sharon to Foxborough, near the residence of B. Reynolds, Esq. and crossed a plain of $1\frac{1}{2}$ miles, and a part of a Cedar Swamp not deep, leaving the most of it on our left, to the road about 25 chains to the west of Thomas Clark's in Sharon. From Johnson's dam to Reynold's is 127 chains, and the ascent is 58.07 feet, besides being somewhat irregular. The above mentioned plain (called Sharon Plain) is, at Reynolds's, 205.23 feet higher than the Stone Factory Dam, and 261.41 above the marsh at South Boston.

7. This ascent of 205 feet is made in the distance of about four miles; and as such an inclination is to be avoided if possible, especially in a road of this kind, it seemed desirable to ascertain if this summit could be surmounted with greater facility, by any other route. For this purpose, three other routes were surveyed from Canton to Sharon Plain. The first diverged from the main route, on the before mentioned estate of A. Kingsley, and crossing an arm of the Fowl Meadow, 30 chains west of the Stone Factory, rises the hill in the woods, passes to the right of Caleb Johnson's, and continuing along the eastern declivity of Moose Hill, reaches Sharon Plain, near Oliver Lathrop's, passes Billings's Pond, near Lemuel Howins's, and unites with the main route again, near Thomas Clark's. This route is 15 chains shorter than the one first described: but, besides passing near no

place of business, does not, so far as is shown by the survey, appear to admit of so convenient a distribution of the difference of level without expensive embankment, as the route by Sharon Factory. —A *third* route was surveyed between these two, and shorter than either by nearly one half a mile, but still more objectionable with respect to the difference of level in its several parts.—A *fourth* route was surveyed, diverging from the first at Presbry's dam, and following the course of the valley of the Massapaog brook, passing to the west of Massapaog Pond, and communicating with the first, near the above named Thomas Clark's. This route is not shorter than the first; and affords no greater facilities for surmounting the elevation of Sharon Plain. Its greatest recommendation is the large quantities of granite rock which lie along this valley.—It is believed, however, that this route through Canton and Sharon, may be improved by crossing Canton river a little farther east, falling into the trace of the first described survey near Mr. Shepherd's, and again diverging from it, a little to the west, near Obadiah Johnson's, and striking the plain *west* of Reynolds's.

8. After making these lateral surveys in Canton and Sharon, we resumed at the bench near Thomas Clark's, the line of our survey towards Providence. We immediately make an ascent 18.63 feet in 9 chains, and fall again to the same level in about 10 chains more. The route then pursues a direction varying little from S. 28° W. crossing the main

branch of Taunton River at what is called the Old Furnace Dam, near an angle in the boundary line between Sharon and Foxborough. The line continues very nearly in a direction to Providence, leaving the house of Seth Boyden, Esq. about 15 chains to the right, and passing between Stephen Boyden's house and barn, crosses a wood to the Belcher road, and passing over fields comparatively level, for another mile, intersects the Mansfield and Foxborough road 60 or 70 rods south of Mr. James Paine's. Near Mr. Seth Boyden's there are several large undulations in the surface of the ground, of from 20 to 30 feet in height as will be seen by referring to the plan and profile which accompany this report, and which we wish to have considered as a part of the report of this survey. Upon the plan, the two main routes are marked by a full red line; and the base of the profile is also a red-line, which represents the level of the marsh at South Boston. The numbers written vertically, beneath the base line, give the elevation, in feet of the corresponding point, above this level.

9. The plan also exhibits considerable variations of level, in the wood land south of Stephen Boyden's; but it is believed that by varying a little from the trace of this survey, though not so much as to increase the distance in any considerable degree, this objection may be principally obviated.

10. From the Mansfield and Foxborough road, the line of the survey runs S. 28° W. crosses the road near Mr. James Skinner's in Mansfield; pro-

ceeds mostly through light wood land, and crossing the road a few rods east of Col. Lane's, passes through a wood of half a mile in extent, and crosses Wading river 10 chains below the saw mill, near Elijah Hodges's on the road leading from Taunton to Worcester. In all this distance there is a very gentle variation of level, except at the river; here is a difference of 35 feet in 15 chains, which, however, may be reduced sufficiently by a suitable embankment at the river, and a not very expensive cut at the road. From this place the route is through a wood for two miles, in the same direction, and with a general descent of about 15 feet in a mile. This brings us into the township of Attleborough; and crossing the road 20 chains east of Evon H. Rounds's, we find before us a swamp of great extent, and from 6 to 10 feet deep; but by passing a little to the left, we may cross it in the direction of two islands, which not only reduce the distance of building to about 30 chains, but being of gravel, they afford a great degree of facility for accomplishing this purpose. This swamp is known by the name of Bungy Swamp.

11. From this place we pass over a plain of $1\frac{1}{2}$ mile in extent, through the village of Attleborough Precinct. Passing this plain, which is of gravel, the survey crosses Ten-Mile river, at this place about 30 feet wide, the immediate banks of which lie 17 feet below the plain. From Bungy Swamp to this place, the line of the survey is in the direction of S. $33\frac{1}{4}^{\circ}$ W. This direction is continued,

with some slight variations, in compliance with the character of the ground, for about a mile, where the line again crosses Ten-Mile river, just below Dodge's Factory, and intersects, at the distance of 10 chains farther, the road leading from Attleborough to Providence. The road here is 29 feet higher than the bank of the river; but this elevation may be avoided, as was afterwards seen, by crossing the river a little farther to the west.

12. From this place, the direction of the survey is S. 40° W. to the distance of 3 miles, with no objectionable difference of level. It here crosses the road a little north of a house known by the name of the Titus House; and, taking the direction of S. 33° W. at the distance of one mile, crosses Ten-Mile river a third time. The river is here about 50 feet wide, and from 3 to 4 feet deep. The bank is low on either side, for several chains; and the descent from the Titus House to these banks, is 44.05 feet. In the next 15 chains, the ground rises 24.24 feet, which brings us on to Seekonk Plain. This plain opposes no obstacle to the construction of a Railroad. The survey proceeds about two miles across this plain, to the outlet of Seekonk Cove. The Cove is here $3\frac{1}{2}$ chains in width, and from 4 to twelve feet in depth. The point shown us as *high-water mark*, is 63 feet lower than Seekonk plain, and 1.96 feet above the Marsh at South Boston. The ground on the south side of the Cove, rises abruptly 20 feet to the general level of the country on that side. On the

north there is a beach of about two chains, from which the ground rises rapidly to the level of the plain.

13. From the Cove the direction of the survey is S. 33° W. 70 chains to the road leading to Moses Brown's bridge; then along the road 14 chains, and bearing a little to the left, pursues the general course to India Bridge, with some slight variations, in compliance with a somewhat uneven surface. The variations of level, however, are such as may be disposed of without great expense.

14. From South Boston to Seekonk Cove is 40 miles and 1 chain; and from the Cove to Providence side of India Bridge, is exactly 2 miles. From the Bridge to the Steam-Boat Wharf, is 79 chains, making precisely 43 miles from South Boston to the Steam-Boat Wharf in Providence. A straight line from the Green Stores at the west end of South Boston Bridge, to Providence Market House, measures 39 miles 46 chains; and bears S. 33° W. (Mag. Mer.)

WESTERN ROUTE.

15. From the Steam Boat Wharf in Providence we proceeded to make a survey of the Western Route, through Wrentham, and Walpole to Boston. From the steam-boat wharf to the market-house, is

50 chains; and from this to the canal basin, is 18 chains. Here the survey leaves Providence River, and proceeds along the banks of the Blackstone Canal about a mile; from which it continues nearly in a straight line to Central Falls, which bear N. 33° E. The line of the survey passed through Pawtucket Village, about 20 chains from the lower bridge. The village of Central Falls is $\frac{3}{4}$ mile from the principal street in Pawtucket. At Central Falls we cross Pawtucket river; at which place a bridge of 150 feet in length and 18 feet in height will be required. On the Rhode Island side is a rock of this height; and on the Massachusetts side of the river, the bank is within about 4 feet of this height. On leaving Central Falls, we continue in the same direction $\frac{1}{2}$ mile to Carpenter's Dam. The profile of this portion exhibits a considerable difference of level: The distances, however, are so short, and the nature of the ground such, as to render the levelling more easy than would appear from the profile alone. In the first ascent from the river, are large quantities of stone which would be wanted in constructing a bridge; and on each side of the ravine which is crossed by the line of the survey, the elevated portion of the line is composed of loose gravel within convenient distance of the part to be embarked.

16. From this place, the general direction of the survey, is N. 21° E. and nearly straight for $6\frac{1}{2}$ miles, to the boundary line between Attleborough and Wrentham; thence N. 05° E. 3 miles. In

these $9\frac{1}{2}$ miles, the difference of level is as follows. In the first $1\frac{1}{2}$ mile there is an ascent of 36.55 feet; the next $1\frac{1}{2}$ mile is greatly undulating, but preserves a general level: 1 mile a rise of 80 feet; 36 chains, a fall of 36 feet; $\frac{3}{4}$ of a mile, a rise of 73 feet; 1 mile gently undulating; but preserving a general level; $\frac{1}{2}$ mile a fall of 24.49 feet; $\frac{1}{4}$ mile level; $\frac{1}{4}$ mile, a fall of 33 feet; $2\frac{1}{4}$ miles, an ascent of 69.68. The portion just described contains the most difficult part of the western route.

17. The course of the survey for the next mile, is N. $26\frac{3}{4}^{\circ}$ E. and with slight irregularities in the surface of the ground, rises in the mile $15\frac{1}{2}$ feet. This brings us to the 304th level of this route, at once the summit, and the point of greatest divergence from a straight line from Boston to Providence. This point is about $1\frac{1}{4}$ mile south of Wrentham meeting-house. From this point we carried the level nearly in a straight line back of the Rev. Mr. Fiske's; and crossing the road near the academy, we bore to the left, intersecting the turnpike at a small angle, about 30 chains east of the meeting-house. This course is continued, till the trace of the survey has diverged 25 or 30 chains from the turnpike; whence it proceeds N. 42° E. till it falls into the valley of a brook, known by the name of Jotham's brook, one of the four streams which meet in Walpole and form the Neponset river.

18. From Wrentham to the place where the survey falls into this valley, is $6\frac{1}{4}$ miles. In this distance, we have a fall of 74.34 feet in 85 chains;

an ascent of 56.11 feet, 43 chains ; and a descent of 45.95 feet, in 23 chains. This last may be considerably reduced by continuing on the declivity of the hill, which does not diverge far from the line of the survey, and falling into the valley farther east. For the remainder of the above-mentioned distance, (which is nearly $4\frac{1}{2}$ miles, and distributed between the portions which have these inequalities of level,) there is no objectionable inclination. In this distance, however, the survey crosses two portions of swamp, from 2 to 6 feet deep, in the whole 18 chains in extent.

19. The survey proceeded down this valley, crossing from the left, to the right bank of the stream, at the head of Plympton's pond. It may perhaps be found to be better on the south-eastern side of the valley to this place. At Ellis's Factory, just below, we cross again to the left bank of the river, and continue along this bank, crossing the Norfolk and Bristol Turnpike, east of David Morse's—we pass near Bird's paper factory and Morse's mills ; and crossing a small elevation, we fall again into the valley of the Neponset, which we cross twice in less than half a mile.

20. From the place where the line of the survey first falls into the Neponset valley, to this place, is $4\frac{1}{2}$ miles, and the difference of level 119 feet : which, when the road shall be made, will give an almost unbroken inclination of 25 feet in a mile, the whole distance. From Morse's mills, the direction of the survey was N. 51° E. to the edge of

Purgatory Meadow, near Leonard Fisher's, in Dedham. It crosses this meadow in the direction of N. 68° E. and intersecting the road leading from Dedham to Canton, passes along the western border of Fowl Meadow, and over Low Plain, a little to the west of Sprague's pond, and crosses Neponset river in the direction to Sumner's paper mill; and crossing the river again at the paper mill, gradually rises the hill in the direction to Dr. Codman's meeting-house in Dorchester.

21. From Morse's plain in the westerly part of Dedham, to a point in the survey near Leonard Fisher's, there will be, when the road is made, a gradual rise of from 20 to 25 feet in a mile,—that is, an ascent of about $\frac{1}{4}$ of a degree. From Leonard Fisher's across Purgatory Meadow and Swamp, is about 1 mile. From this to the Neponset, the ground is of a loose gravel, with one or two small portions of wet land; but generally it is favorable for the construction of a road. The rise from Neponset river to Dr. Codman's meeting-house, varies from 20 to 30 feet in a mile. At this place the line of the survey crosses the Milton Upper Road, passes a little to the east of the residences of Messrs. Penniman and Fuller, and takes a direction by which it falls into the Lower Road, near the residence of the late Madam Swan. From the Upper to the Lower Road, in this route, some expense of digging and embanking would be required. The survey of this route terminated at this place; but there seems no obstruction to a Railway, either to

South Boston, by way of the Toll-House on the Taunton turnpike, or to Boston Neck, passing near the residence of the Hon. Jonathan Hunnewell, of Roxbury. If continued to Boston over the Neck, this route might probably be improved by crossing the Upper Road near to Edward Williams's, passing a little to the east of T. K. Jones's, and intersecting the Lower Road about 40 chains farther to the north.

22. From the *Green Stores*, at the west end of South Boston Bridge, to Central Falls, where this route crosses the Rhode-Island line, would be 36 miles and 50 chains; to Providence Market House, 41 miles 23 chains; to the Canal Basin, 41 miles 10 chains; to the Steam-Boat Wharf in Providence, 42 miles.

23. We also surveyed another branch of the western route, diverging from the one already described, near Morse's Mills, in Dedham, passing a little to the east of the Rev. Mr. Cogswell's meeting-house, and crossing Purgatory Meadow, about half a mile west of the other branch. From this Meadow to Dedham village, is three miles. The line of this part of the survey is nearly straight, varying a little to the left in one place to avoid Wigwam Pond and Swamp. Passing through the east part of the village, it takes the direction of the turnpike for about 30 chains; then bearing to the left, it passes down Spring-street in Roxbury; and falling into the turnpike again at Swallow's tavern, it continues the direction of this road near to the Cold-Spring tavern. Here it leaves the turnpike, and keeping down

the valley to the left, crosses the Boston and Dedham road near the residence of the Hon. John Lowell. Then continuing the course of the brook, it intersects the Brookline road near Wait's Mills. From this place the road may be carried directly to the southern or western part of the city. From Wait's mills to Central Falls, the line of the survey measures 35 miles and 74 chains.

24. We also run a level from Attleborough Precinct to Central Falls. We here met with no considerable difference of level; except in one place near Mr. Ide's, we surmounted an elevation of 75 feet in $\frac{1}{2}$ a mile. As this would be the only place where much cutting and embanking would be required, the expense of levelling for the whole distance of a few chains over 6 miles, would not be very great. These branches are represented upon the plan by a dotted line.

25. Before locating the road, it would be necessary to make some farther examinations in the neighbourhood of these several routes. We had intended to make some farther surveys before presenting our report,—one of a route from Foxborough to Pawtucket; a short branch in Canton and another in Walpole; but the uncommon inclemency of the season, and the shortness of the time remaining, in which to prepare our plans and estimates, prevented us from accomplishing this design.

26. It will be seen from the account which has now been given, and more readily perhaps by referring to the plan and profile of the survey, that the general character of the ground in both routes,

is very favourable to the construction of the proposed Railway. In examining the profile, however, it is important to take into consideration the scales upon which it is drawn; the vertical scale being to that of the horizontal, in the ratio of 20 to 3; so that the ascents and descents in the profile view, are nearly seven times as great as those of the ground they represent.

27. We are now to consider in what manner these acclivities and descents can be disposed of, so as to adapt them, in the best possible way, to the application of *horse power*, which it is presumed, is that to be employed in propelling the Railway carriage.

The power which a horse is able to exert, in urging forward a loaded carriage, varies with two circumstances; the speed with which he moves, and the length of time in which his power is exerted; and is *less* as either of these is *greater*, the other remaining the same. It is given, by the most cautious authorities on this subject, that on an average, a common sized horse is able to exert, without considerable fatigue, and with a speed of 3 miles an hour for 6 hours in a day, a power of 125 lbs. The speed of the animal may be increased without materially affecting his power, by a corresponding diminution of the length of the day's work; and *vice versa*; but by neither of these changes is the horse able to perform a *greater amount of effective labour*, in the transportation of heavy goods; losing always in speed, what is gained by an increase of the length of the day's work; and in the length of the time in which he is able to

work, what is gained by the increase of speed: and even more, if the variation from this speed and duration of labour, be very considerable.

28. This estimate of the power of the horse, may appear much too low, to those accustomed to the use of this animal; but it is to be considered that continued traction is here supposed, with no intermission of effort: for under circumstances which admit of alternate exertion and relaxation of effort, the power of the animal is *twice as great*, and more if the intervals are short. He may also be made to exert a *greater* power for a short time by a proportional diminution of his speed, and the day's work still continued to 6 hours. These two last circumstances are those which render this kind of power peculiarly applicable to the propelling of carriages over an undulating surface: whereas a *constant power* would require for its economical use, either a continued level, or a uniform inclination throughout the whole extent of the road.

29. The experiments which have been made to ascertain the amount of friction in the Railway carriage, give somewhat different results. Some make it require only 10 lbs. per ton to overcome the friction of a car which with its load weighs 5 tons; others have made it require from 12 lbs. to 12½ lbs. per ton. That we may be entirely safe in our calculations, we will allow 12½ lbs. per ton for the resistance caused by friction. The load then for a single horse power of 125 lbs. on a level way, will be 10 tons. And the effect of friction will be just equal to that of gravity, on a road inclining 30 feet in a mile. So that in ascending

such an acclivity, it will require a power of 25 lbs. per ton, ($12\frac{1}{2}$ for friction and $12\frac{1}{2}$ for gravity) or 250 lbs. for 10 tons: whereas in descending such an inclination, the friction counteracts the effect of gravity, and no consumption of power is therefore required, except what is sufficient for overcoming the resistance of the atmosphere.

30. In cases where great dispatch is required, as in the conveyance of passengers, any suitable speed may be obtained by diminishing the load or the duration of labour, or both. If the load be reduced to 5 tons, the horse will move $4\frac{1}{2}$ miles an hour for 6 hours in a day, or $5\frac{1}{2}$ miles an hour for 4 hours a day. And if the load be reduced to 4 tons, and the duration of labour to 2 hours a day, the speed of the horse may be increased to 9 or 10 miles an hour, depending upon the natural facility with which the animal travels when unloaded.

31. If the load of the draft horse be reduced $\frac{1}{4}$ th that is to 8 tons instead of ten, it will reduce the traction on an acclivity of 30 feet in a mile to 200 lbs. and will enable the horse with the same expense of effort, to exert during $\frac{1}{4}$ th of the time, *twice as great* a power as is required to urge the load up an inclination of thirty feet in a mile; that is, for one fourth of an hour in every 2 hours, the horse can exert a power of 400 lbs. which would propel the same loaded carriage of 8 tons, up an acclivity of 84 feet in a mile; that part only of the resistance, which is caused by gravity increasing with the elevation; that caused by friction remaining nearly the same.

2. To comport then, with this reduction of the

single horse load to 8 tons, $\frac{7}{8}$ ths of the way may have alternate ascents and declivities of 30 feet in a mile and the remaining $\frac{1}{8}$ th an inclination of 84 feet in a mile. To this there could be little objection, if *this one eighth* of the route, could be so distributed as to have ~~no~~ more than $\frac{1}{4}$ th of a mile of it, in any two miles together. This extra exertion required of the horse, would then be only for five minutes at any one time.

33. By an inspection of the profile view of these routes, it will be seen that about $\frac{7}{8}$ of either of them, may, without any very expensive cutting and embanking, be reduced within the limits of a 30 feet inclination—most of it far within this limit—but the remaining *one eighth* will not be so distributed as to come within the conditions just stated. As it respects inclination, however, it seems practicable to reduce it not only within the 84 feet limit ; but most of it, if not all, without very great expense, to something less than 60 feet in a mile ; which would only require a power of 300 lbs. instead of 400, to urge the loaded carriage of 8 tons along the ascending plain.

34. I said that these portions of the two routes, which have the greater inclination, seem not to be capable of being so disposed of as to bring them entirely within the power of a single horse, loaded with 8 tons. In Canton and Sharon on the eastern route, there is a rise to the south, of 200 feet in about four miles ; and for nearly two miles in the ~~four~~, the rise is about 75 feet in a mile. There is a similar portion of the western route in Attleborough:

If, after farther examination, it shall appear that these portions are incapable of being farther reduced, and no more practicable method for surmounting these elevations, should present itself, extra horses can be kept at these places, to aid the teams in ascending these acclivities. With such assistance it is believed that the teams would be able to carry through their several stages, a full load of 10 tons to a horse.

32. By examining the profile, it does not appear that very expensive cutting or embanking will be required to bring the inclinations in the road within the limits above stated. The precise amount of its excavation and embankment, as well as the cost of execution, could only be shown by an estimate *in detail*, of every part of the road. If the time admitted of such an estimate, it would still be but an approximation to the expense of constructing the proposed work:—as it is almost certain that in locating the road, the trace of neither of our surveys would be followed in all its parts. An estimate may be made sufficiently exact, however, to answer every purpose as a guide in judging of the probable expense of such an undertaking.

33. The estimate here presented, is for a Railway consisting of one set of tracks, with three sets of side tracks for passing in the middle of the route; and one set half way from the centre to each extremity: these side tracks to be from 300 to 500 feet in length each, according to the number of carriages to be accommodated. Three tracks at each extremity of the route, will also be required.

ESTIMATE OF ONE MILE OF RAILWAY.

For cutting embanking and levelling, at 10 cents per yard (average per mile):	\$1000 00
For bridges, culverts, and drains . . .	500 00
For trenching for foundation	125 00
For foundation wall, at \$1 per rod . . .	640 00
For rail stone in blocks of granite equivalent to a foot square, and from 6 to 12 feet long together with the cutting, at twenty cents per foot	2112 00
For drilling 22 holes per rod, 2½ cents each	352 00
For iron rails prepared for nailing, together with the nails by which they are to be fastened to the stone, 6 cents per lb.	1800 00
For levelling the rail stone and securing the iron rail	528 00
For extra expense at cross roads . . .	10 00
For gravelling 10 feet wide, at 20 cents per yard	195 00
	7262 11
For superintendence, contingencies, &c.	726 00
	\$7988 00

In estimating the expense of cutting, embanking and levelling, the first six miles of the eastern route are taken, as presenting a pretty fair specimen of the amount of labour required to bring the road within the proposed inclination. It is believed that this portion does not present too favourable a specimen. This estimate provides for a road fifteen feet wide. The item of damage is not included in this account, for reasons stated in the general report.

All which is respectfully submitted,

JAMES HAYWARD.

Engineer to the Board of Internal Improvement.
Cambridge, Jan. 21, 1828.

ERRATUM.—Page 37, line 13, for "marshy" read *marshes*.

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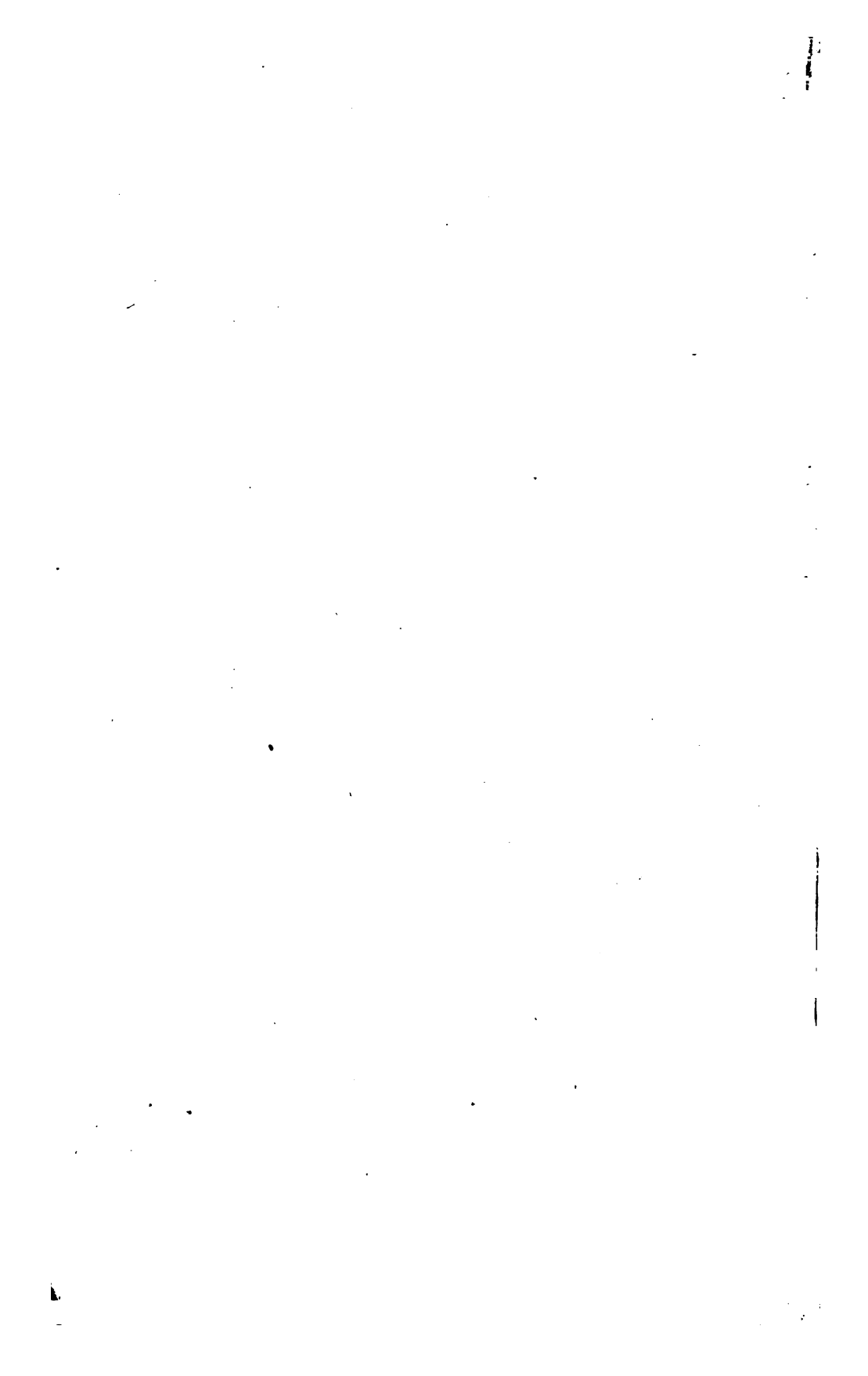
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